A. R. E. A. Meeting Report Number
MARCH 18, 1944

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Railway Age

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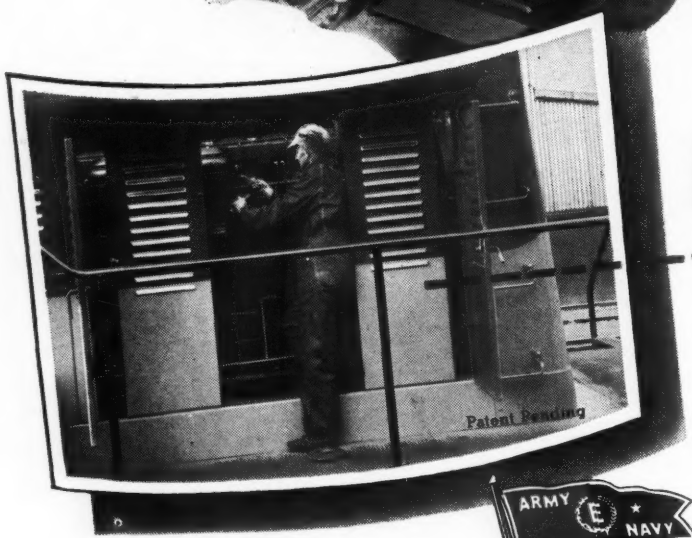

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Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 116, No. 12.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 116 March 18, 1944 No. 12

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y. AND 105 W. ADAMS STREET, CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1081 NATIONAL PRESS BUILDING. CLEVELAND 13: TERMINAL TOWER SEATTLE 1: 1033 HENRY BUILDING. SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES 14: 530 WEST 6th STREET.

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RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PAPERS (A. B. P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00; SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK 7.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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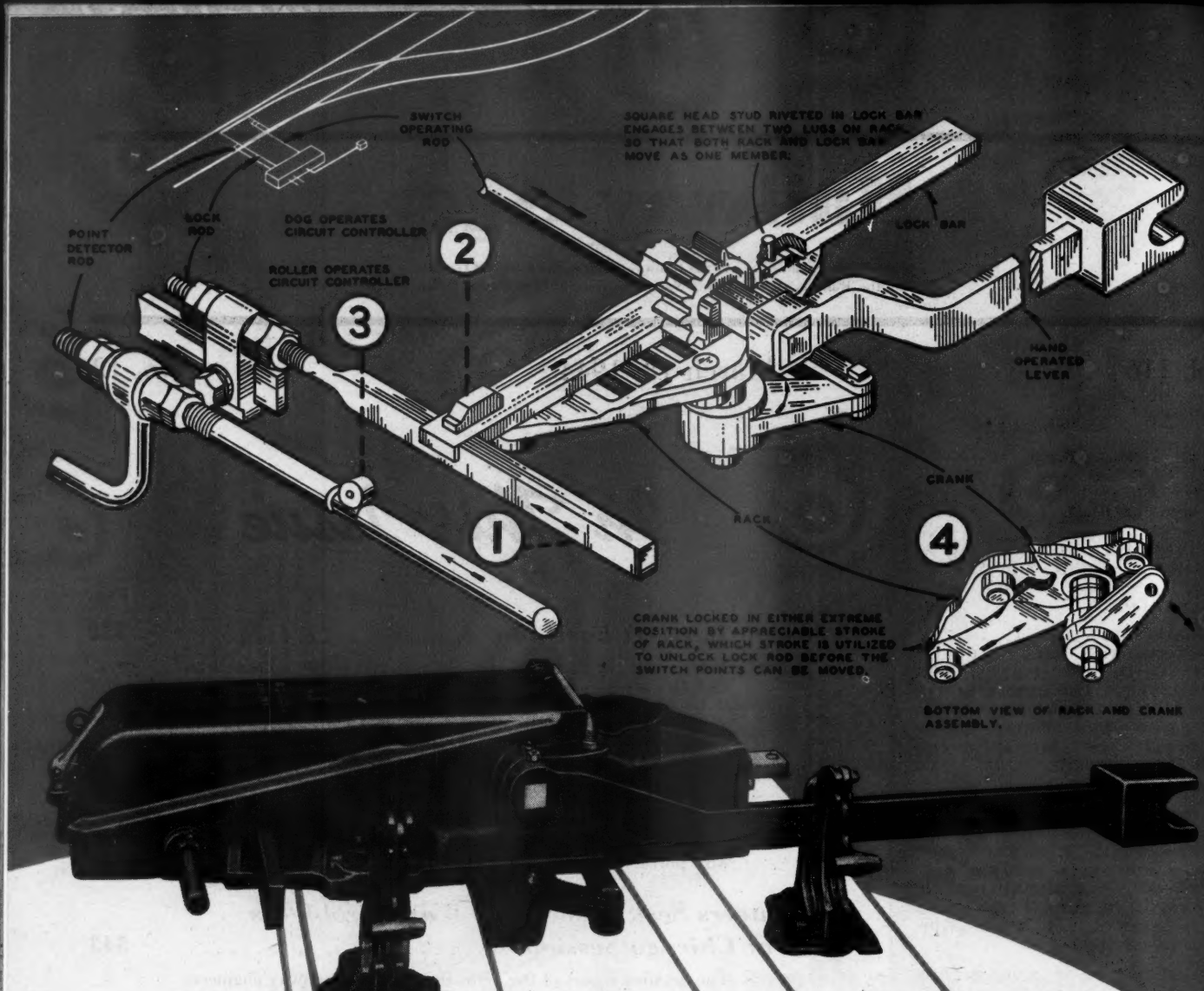
PRINTED IN U. S. A.


SWITCH OPERATING ROD
SQUARE HEAD STUD RIVETED IN LOCK BAR ENGAGES BETWEEN TWO LUGS ON RACK SO THAT BOTH RACK AND LOCK BAR MOVE AS ONE MEMBER.
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LOCK BAR
HAND OPERATED LEVER
CRANK
RACK
CRANK LOCKED IN EITHER EXTREME POSITION BY APPRECIABLE STROKE OF RACK, WHICH STROKE IS UTILIZED TO UNLOCK LOCK ROD BEFORE THE SWITCH POINTS CAN BE MOVED.
BOTTOM VIEW OF RACK AND CRANK ASSEMBLY.

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The Week at a Glance

REQUIESCAT: Joseph B. Eastman had come so to typify the government, and so largely to sway its policies, in its far-flung and complex relations with common carrier transportation that it is hard to imagine the shape these mutual dealings will now take without him. His death leaves a depressing void in the hearts of countless persons of all shades of political and economic opinion—with little recognized common interest beyond their regard for this extraordinary man. There are others who can carry on his work, when it is estimated merely from its intellectual content, but there are few indeed who can so move others to common action, because it is not given to many to attain his level of simple disinterested integrity, and single-minded devotion to the public welfare. A review of Mr. Eastman's almost unique contribution to public life, and especially to the development of governmental dealing with transportation, appears on page 532 herein.

●

HE NEVER QUIT LEARNING: Of how many men can it be said—that they never cease learning—not only new things, but new ways of looking at and doing things? Consider Mr. Eastman's approach to practical transportation problems even so recently as the earlier part of his "Co-ordinator" career, in contrast with that which has characterized his direction of the O. D. T. In 1933-34 he was still using the reformer's technique of lecturing and admonishing those whose actions he hoped to influence. Ten years later, he was consulting everybody before issuing his infrequent orders—operating on the assumption that people want to do the right thing, if they can only find practical ways to do it. Is it going too far to attribute, in large measure, to his constant moral as well as intellectual growth the fact that transportation in this war is being conducted with effective, co-operative enthusiasm—rather than the ineffective authoritarianism which predominated in World War I? Those who would honor this great man's memory—of whom there will be many—may perhaps do so most effectively by trying to keep alive the spirit with which he approached controversial issues.

●

A LITTLE GOES FAR: The Rock Island is using 1000-hp. Diesels in combined road and switching service on two secondary main lines, thereby releasing steam power badly needed for more effective use elsewhere. The road's Automotive Equipment Superintendent Downey in a short article in this issue reveals how these Diesels have been meshed into situations where they are proving of extraordinary convenience and economy, as well as a welcome device for stretching out the motive power supply over an impatient demand.

●

SOCIALIST DRIFT: Donald Conn has asked a Wichita audience—as reported in our news pages—to ponder the plight of private capital invested in transportation, in view of the continued increase of government money going into competing facilities—which are untaxed and under no obligation to earn a return for the owners. He suggests that the federal government has no one settled policy toward transportation—but several policies in incompatible conflict with each other, the result of legislators being tugged about by special interests who seek always the immediate well-being of No. 1 and seldom if ever of the national welfare involved in the preservation of private capitalism. If this conflict is not realistically resolved, there is acute danger that all of transportation may slump into socialism—not by popular volition but by the failure of confused federal policy to provide a framework in which private enterprise can earn the profits upon which its continuance depends.

●

SPENDING FOR SAFETY: If Congress makes up its mind to give the states a handout from the federal treasury, after the war ends, in the form of $3 billion or so for more and better roads, then a fixed portion of it ought to be earmarked for the removal of grade crossing hazards. So Judge Fletcher told the House roads committee this week, and he added the reasonable suggestion that the beneficiary of this automotive safety measure—not the railroads—ought to pay the whole cost of the work. As to the wisdom of the entire program of smoothing the way for road vehicles at the general taxpayers' expense, he reserved the privilege of expressing himself on a suitable subsequent occasion.

●

RR RADIO NO NOVELTY: The flexibility of radio—as compared to existing signal apparatus—impresses Chairman Fly of the F. C. C. as a characteristic that would make it particularly useful as a medium for the control of train operations and the promotion of safety on the railroads. Moreover, he told Senator Wheeler, as reported in our news pages, the railroads have been and are well aware of this and other desirable qualities of this form of communication, and are actively fostering research in its practical applications. He went on to point out, however—and possibly the observation might be helpful to some commentators who have expressed themselves rather freely on the matter—that radio on the railroads has to be integrated with all the other uses of radio, a job on which the technicians are now busy.

●

SATISFIED CUSTOMERS: There are plenty of people who reveal themselves to be none too well informed on the subject who think the domestic air cargo transportation set-up needs some kind of drastic medicine—though the prescription is yet to be formulated. R. E. A.-president Head points out in our news pages, though, that private enterprise already has provided every town in the United States with air express service, even while the theorists are still trying to work out grandiose plans for a different brand of cargo service—largely at public expense. The customers and the airlines, incidentally, seem to think the present variety is very satisfactory. Apparently about the worst thing that has been said of air express is that a railroad-owned outfit has been enterprising enough to develop it.

ENGINEERS FIND ANSWERS: Demonstrating by their proceedings that they didn't go to Chicago just for the ride, the engineers held their annual meeting this week (reported herein), devoted to discovering and disseminating solutions to the pressing war-time problems of their department. Transportation Equipment Director Mann of the W. P. B. told the engineering officers that prospects are good for their getting almost the 2.2 million tons of rail in 1944 which the O. D. T. asked, and the discussion took up each important class of scarce material and how the supply may be conserved or expanded. Similar minute and practical scrutiny was devoted to labor supply, and the multitude of other questions which concern the engineering aspect of adequate wartime transportation.

●

REPORT OF FAILURE: The efforts of the surviving members of the B. I. R. to dip their hands into the federal treasury again appear to have been thwarted, according to the account in this week's news. Even Senator McKellar, of whom they had good reason to expect kinder treatment, turned on them with the comment that a public agency that had paid no attention to a contract it made with Congress put itself in the position of a blackmailer when it asked again for more money. Though the board protested at length that it hasn't had time to do the job it was hired for, it seems to have found time to turn out the interterritorial rate report that Senator McKellar bargained for, and board-member Childe is able to find abundant extra-curricular time to do Senator Stewart's "experting" on the same subject.

●

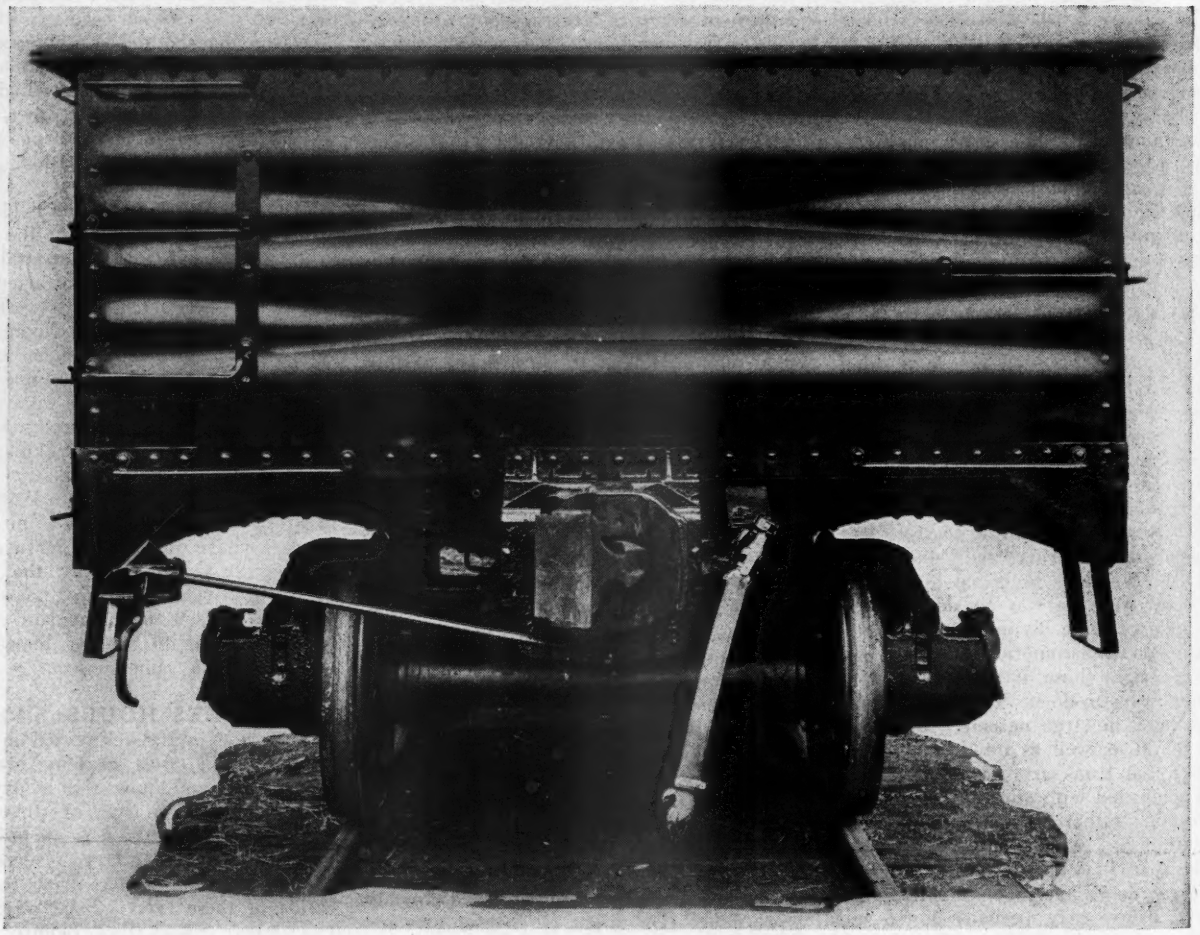
EMPLOYEES' HOURS: Since the public is by now pretty well posted on "featherbed" rules in effect in some branches of railroading—and knows that a "day's" wage is often earned in two or three hours—the mistaken conclusion is not infrequently drawn that there is a large reserve of labor available to the carriers from the modification of these rules. Such might be the case where these rules require unneeded employees, but they are not limiting working hours. The payment of a "day's" wage for only a few hours' work doesn't mean that employees are putting in only those few hours; instead they are going on working a full complement of daily hours, and drawing, in many cases, two or more "day's" wages therefor. The leading editorial cites I. C. C. wage statistics as evidence that railroad employees are working longer hours than those prevalent in the manufacturing industry.

●

MOVABLE TROLLEY WIRE: Where large quantities of loose material have to be loaded, hauled, and dumped, and especially where water and fuel supplies may be inadequate, electric locomotives—operated either by batteries or an overhead contact system—have definite advantages, one of this week's feature articles points out. Installation problems incident to shifting the tracks about as the work progresses have been met by the development of a portable overhead contact system that is described in detail.

TO KEEP CARS IN SERVICE AND MAINTENANCE COSTS AT MINIMUM

DREADNAUGHT ENDS



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RAILWAY AGE

Efficiency FOR VICTORY

Railroad Employees' Hours of Labor

Bearing on the question of the severely limited supply of manpower on the railroads, the suggestion is occasionally made that the situation might be improved if railroad employees would work more hours per week. Interstate Commerce Commission statistics of wages and hours of labor for November, 1943 (the latest month for which complete data are available), indicate that railroad employees, as a whole, are already working materially longer hours than is averaged in the manufacturing industry.

For example, in November, 1943, according to the compilation of the National Industrial Conference Board, average weekly hours of labor in the manufacturing industry were 45.5. There was, in the same month, no department of the railroads in which average hours of labor did not exceed 48 (although lesser average hours were recorded by a very few individual railway occupations).

To cite a few typical instances: average weekly hours last November were 49 for professional and clerical (hourly-basis) railroad employees; 48.3 in train and engine service; 52.6 in maintenance of way; and 52.7 in maintenance of equipment. In three years (since November, 1940) average hours worked per week increased 6.9 per cent for professional and clerical employees; 17.8 per cent in the maintenance of way department; 14.9 per cent in maintenance of equipment; 10.6 per cent in train and engine service. These increases in hours worked were, of course, matched by a large increase in weekly earnings, and by an enormous increase in overtime paid for at punitive rates. Railroad employees have been handsomely compensated for the longer hours of labor they have put in—but they have put them in.

In train and engine service most occupations last November showed longer average hours per week than those of the manufacturing industry. The only train and engine service jobs where average hours actually worked (as contrasted to the vastly larger number of hours paid for) were less than 40 per week were those of passenger engineers and firemen—tasks which are recognized as requiring unusual alertness by having their "basic day" fixed at 5 hours instead of the customary 8.

These statistics are significant, since road train and engine service employees are paid by mile or hour "whichever exceeds," and employees often earn the mileage equivalent of eight hours' wages in a mere fraction of that time.

The figures reveal that, notwithstanding this method of payment which would permit many of these employees to earn a "month's" wages in as few as 10 days' actual work, nevertheless these employees, on the average, are putting in *actual* hours of labor which challenge comparison with those in any other industry. Their earnings under such conditions, of course, are extremely favorable—but the statistics indicate that they certainly are not doing what is reported here and there in some other industries, i.e., taking a holiday for themselves as soon as a customary weekly wage has been earned.

What these statistics of average weekly hours suggest primarily, however, is that there is not any reservoir of surplus labor for the railroads to draw upon in longer working hours. The serious shortage of manpower, caused by Selective Service's persistent induction of irreplaceable skilled transportation men, cannot in any measure whatever be relieved by extending hours of work, because most railroad employees are already working longer hours than those prevalent elsewhere in industry.

Must Modern Power Have Its Hands Tied?

The high records of performance that have been made by American railroads over a period of more than two years have been made primarily because of the heretofore unused capacity and high utilization of motive power. Regardless of whether one looks at motive-power utilization from the standpoint of freight operations or passenger operations the story is the same. Ever since the fall of 1942 better than 85 per cent of all of the locomotives have been in service and remarkably low percentages of stored and shopped power have prevailed.

Some time ago the suggestion was offered that we have reached the practical limit of locomotive utilization from the standpoint of ratio of active locomotives to total inventory. For 15 months this percentage has varied between 86.1 and 87.8. The October peak of 1942 (every month since then has been a peak by pre-war standards) utilized 87.8 per cent of the active freight locomotives, during which month the Class I roads handled 141.8 billion gross ton-miles. The October peak of 1943 involved the handling of 145.1 billion gross ton-miles and utilized 86.2 per cent of the freight locomotives inventory. An interesting fact about the comparison of these two normally peak traffic months is that in 1943 the freight locomotive inventory was only 10 units higher than in 1942—22,037 as compared with 22,027. However, in 1942 there were 2,344 unserviceable units and 340 stored, while in 1943 there were 2,666 unserviceable units and 355 stored. The difference in active locomotives was 19,343, in 1942, as compared to 18,999 in 1943. Herein lies an important consideration.

To those who have analyzed motive power operations carefully it is a well-known fact that overall averages (those involving all locomotives, for all railroads) are extremely deceiving for we are now in a position where the influence of modern power, both steam and Diesel, is great enough to have an affect on the overall averages. Reports from road after road indicate that modern steam power, less than 10 years old, is capable of operating approximately twice the number of miles per month than can be handled by locomotives of 20 years of age. The monthly operating mileages of Diesel locomotives, in both freight and passenger service, are well above those of steam and the number of units of this type of power have now reached numerical proportions sufficient to affect the overall averages.

The suggestion, previously made, that we cannot go much higher in percentage of active to total locomotives now seems to be borne out by the operating statistics of the past several months. If this is the case then we have reached the end of a phase in motive power utilization; namely that phase in which more freight-train miles or passenger-train miles can be handled by the mere process of keeping more locomotives in service. Increases in motive power capacity from this point on must be increases as a result of better dispatching, higher speed, installation of new motive-power units or an increase in steam locomotive availability.

As far as the availability of steam locomotives for road service is concerned the whole question seems to boil itself down to one of finding ways and means to turn power at terminals in shorter periods of time. The major time-consuming operations are those involved in getting over the ash pit and into the house.

Experiences with new power are now comprehensive enough that we know what kind of power will be profitable to use in the post-war period when earnings will depend primarily upon efficiency and operation. There is no better time than now to come to a full realization of the fact that efficient and economical motive power should not be handicapped by obsolete terminal facilities and operating methods.

The A.R.E.A. Meeting

If there were any who questioned the wisdom of the decision of the officers of the American Railway Engineering Association to proceed with the annual meeting this year, after a lapse of one year, the large attendance and the deep interest that was displayed in the intensely practical program throughout the three long days, should provide adequate justification for the action taken. In spite of the fact that engineering and maintenance officers are now in the throes of formulating and organizing programs of record proportions and in spite of the difficulties of travel, the attendance approached that of even the meetings in the boom years of the 'Twenties. In this respect, this meeting duplicated the experience of other groups, like the American Society for Testing Materials, whose members are actively concerned with the war effort. It reflected the more than normal need of the members for the help which they can secure only, or best, from collaboration with others similarly concerned.

The A. R. E. A. has long held a record for serious application to duty. Its meetings are devoid of entertainment and are held at the one central point, year after year. Its proceedings are authoritative on engineering and maintenance practices; its manual is recognized as the standard of best practice. The work which the association has done through the years has reflected the intense seriousness with which the members have accepted their opportunities for service. As a reflection of this adherence to duty, this association has met annually, in good times and bad, every year since its organization in 1900 until last year, and the 1943 meeting was given up with serious misgivings on the part of many who subscribed to the belief that an association which had justified its existence for nearly half a century was doubly essential in periods of extreme stress.

The bringing together from widely separated parts of the country, of men who are abnormally busy in work that is contributing directly to the war effort, can be justified only if the program is of such timely, practical character as to fit these men more adequately to fulfill their responsibilities. This the A. R. E. A. program this week did. Departing from past procedure, the association devoted the afternoon sessions on Tuesday and Wednesday, respectively, to the consideration of the Number 1 and Number 2 problems confronting the railways—labor and materials—with speakers presenting the over-all problem and others equally qualified describing expedients that can be adopted to aid in the solution. On Thursday morning, consideration was given also to post-war preparation, the necessity for which may not be long delayed. Interspersed throughout the meeting were the reports of 22 standing committees, which dealt also with the pressing current concerns.

All in all, the meeting was a most practical forum for the consideration of the new and difficult problems of these trying days. It offered much that members can apply on their individual roads. As such, it constituted a valuable contribution to the railways' war effort. It provided ample confirmation of the wisdom of the suggestion made by Vice-President C. H. Buford of the A. A. R. that the major divisions of that organization hold meetings this year.

Traffic-Direction or C.T.C.?

The universal shortage of railroad employees is especially acute among telegraph operators qualified to handle train orders or to operate interlockings and similar types of control machines, a fact that should be considered when adopting signaling systems.

Signals for authorizing train movements by signal indication rather than by timetable and train order can be controlled by traffic-direction locking between offices at the two ends of any given section of main track, such as between two interlockings; or such signals can be controlled in a C.T.C. system from one office on an extended territory of perhaps 50 to 80 miles, or even an entire engine district of 150 to 170 miles or more.

About two years ago, a railroad was faced with the necessity for expediting train movements on a section of single track about 27 miles long. A decision was made to provide for train operation by signal indication, and to control the semi-automatic signals from local offices by means of traffic-direction circuits. As compared with C.T.C. control from a central office, this arrangement saved one power switch machine and the line coding apparatus that would have been required for centralized traffic control from one office.

The quantity of material thus saved was small as compared with the accounts of the same kinds of equipment which have been manufactured since that time. The important fact is that trained operators are now scarce, and the shortage on this division could have been relieved to the extent of nine such employees if C.T.C. had been installed rather than traffic-direction control.

They Will Keep Their Free Enterprise—*Maybe*

Joseph Bartlett Eastman

Press Association, Inc., Photo

Joseph Bartlett Eastman, director of the Office of Defense Transportation since its inception late in 1941 and an Interstate Commerce Commissioner since 1919, died of a coronary occlusion on March 15 in a Washington, D. C., hospital, where he had gone on February 19 under orders from physicians, who were concerned at the state of his health. It was not then believed—or at least it was not revealed—that his condition was acutely dangerous. The funeral was held on March 17 from All Souls' Memorial Episcopal Church, Washington, with interment, following cremation, to be in the family plot at Binghamton, N. Y.

Mr. Eastman was the nation's best-known and, with justice, its most-honored civil servant—without any near runners-up to dispute his position. A bachelor of scholarly tastes, he poured upon the tasks assigned to him a ratio of his time and a degree of concentration and single-minded energy quite without parallel elsewhere among personalities of public renown. At the same time, he did not permit his attention to his job to narrow his interests, which were extraordinarily wide, considering the limited amount of time he had left to spend upon anything, after his working hours were deducted. His acquaintance also was multitudinous—being practically entire among leaders in transportation and numbered in the thousands outside; and it has been given to few men to know as warm friends so large a proportion of their acquaintance.

Born at Katonah, N. Y., on June 26, 1882, the son of a Congregational clergyman, Mr. Eastman attended Amherst College, where his scholarly attainments were attested by his election to the honorary Phi Beta Kappa society. Like so many young men of intellectual leanings, he left college intent on social reform. Upon the attainment of his B.A. degree in 1904, he spent a year as an Amherst fellow in a social settlement house at Boston, and thereafter was secretary of the Public Franchise League of that city until 1913. After serving for two years as counsel for street railway employees in wage arbitration cases, he was named a member of the Massachusetts Public Service Commission in 1915 and served on it until 1919 when he was nominated as Interstate Commerce Commissioner by President Wilson.

Outgrew Advocacy of Socialized Railroads

Mr. Eastman was a close friend of the late Justice Louis Brandeis and was by many considered his protégé. Innocent of any practical business experience, he was for many years deemed a "Liberal"—not in the old sense of that word, as connotating the absence of governmental interference in social and economic life, but in the modern perversion of the term to indicate those who trust largely to coercive political power to make up for the deficiencies in individual behavior which produce social injustice and conflict. In conformance with the doctrines of this latter-day "Liberalism," Mr. Eastman was for many years an outspoken advocate of government ownership of railroads, even while he sat on the bench under a policy designed to continue them in private ownership.

There were, however, several salient differences between Joe Eastman and most of his "Liberal" colleagues of a decade or two ago. For one thing, he was no perennial sophomore; his observation and study did not cease when he was awarded his academic sheepskin, and

Statement by Senator Wheeler

A statement on Mr. Eastman's death by the chairman of the Senate Committee on Interstate Commerce read as follows:

"Mr. Eastman was an ideal government administrator, one of the finest and best that I have come in contact with in my 20 years in Congress. His passing will be a distinct loss to the Interstate Commerce Commission and to the people of the country generally. If we had more Eastmans as administrators in Washington there would be far less criticism of federal bureaus."

his advocacy of partial socialization of the economy was wholly intellectual—not emotional; a characteristic which enabled him to bid farewell to such advocacy when experience at length was given the opportunity to teach him that its promises did not jibe with the facts. Another trait of Mr. Eastman's, all but unknown among others who shared his former political predilections, was his unqualified intellectual integrity. He could make his mistakes in observation and judgment and reasoning—but he did not make them knowingly or willingly, and he did not struggle to force facts into a mould fashioned from his preconceptions, nor did he obey the orders of any "party line" whatsoever.

Not a New Deal Partisan

The result was that Mr. Eastman was able to profit from his experience, and that, consequently, he outgrew his initial adherence to such modern "Liberal" dogmas as government ownership of railroads and the naive precept that a labor union can do no wrong. He was made to suffer for his intellectual maturity. The unions gave over their advocacy of him, and President Roosevelt left him dangling from day to day on the Interstate Commerce Commission without reappointment from January to July, 1937—largely, it was then suspected, because neither he nor the railway unions had been pleased at Mr. Eastman's handling, as a mediator specially assigned by the President, of the controversy between the railroads and the railway unions in 1934 over the restoration of the 1932 wage "deduction."

Commenting privately on his position at the time of his delayed re-appointment, Mr. Eastman observed that he seemed predestined always to be in the minority. "When the Old Deal was riding high in the '20's," he said, "I did not approve of that—and now when their opponents are in the saddle and also riding high, I discover that I do not find that altogether to my liking either." At his last formal public appearance, at a dinner given in Washington in his honor by I. C. C. practitioners on February 17, Mr. Eastman dwelt on the qualities needed in members of administrative tribunals and concluded that "zealots, crusaders, and evangelists" were out of place in such posts.

His experience as "Co-ordinator" under the Emergency Transportation Act of 1933 was not altogether a happy one—although, as from everything else, he appeared to draw intellectual profit from it. Prevented by the provisions of the law, inserted at the insistence of organized labor, from effecting any real "co-ordinated" economies in transportation, the Co-ordinator's function was largely relegated to that of making studies of possible improvements in transportation operations for future application. Some of these inquiries were carried on in a rather rarefied "theoretical" atmosphere and attained little acceptance from practical transportation people—a failure attributable, perhaps, as much to their manner of presentation, as to the content of the reports. From that experience, Joe Eastman learned the valuable lesson—heretofore mastered by few if any of the school of "Liberalism" from which he ascended—that co-operation comes more often when the initiator begins with the assumption that the "other fellow" wants to co-operate, if he can see his way clear to do so.

He Learned to Persuade, Rather Than Command

The closing months of the "Co-ordinator" regime saw Mr. Eastman the convinced exponent of this technique of collaboration—rather than that of "telling them"—in dealing with leaders of the transportation industry, and this attitude characterized his entire period of service as director of the O. D. T. He did not, in his desire to proceed by persuasion and co-operation rather than by a proliferation of directives, permit himself to be swayed by special interests—but he certainly assumed that all parties wished to help him foster a transportation service that would hurry victory along; and he was not disappointed in the results achieved by this approach. The harshest criticism which any transportation controversialist could utter against an opponent, in recent months, has been: "Why, the so-and-so would even let Joe Eastman down."

It is significant of the character of both men that, when President Roosevelt named Mr. Eastman Director of Defense Transportation, he did not deem it necessary to consult the Commissioner first to be assured of his willingness to serve in this arduous and important war job; the new O. D. T. director was first apprised of his appointment by a newspaper man. Equally indicative of Joe Eastman's character was his observation at that time, in private, to the effect that: "I do not believe I have any special qualifications for this job—which seems to me to call more for administrative talents, than judicial; and I have never considered myself particularly gifted as an administrator. However, the assignment has been given to me and I'll do the best I can with it."

Actually, as it has turned out, the office of O. D. T. director was set down in the middle of a situation fraught intrinsically with constant temptation to grave controversy; and that such untoward behavior has seldom

An Expression from the I. C. C.

Chairman Patterson of the Interstate Commerce Commission had the following to say on the passing of his distinguished fellow-commissioner:

"The Commission has learned with deep regret of the death this morning of our beloved colleague, Commissioner Joseph B. Eastman. His genial, helpful and splendid personality, indefatigable industry, sterling integrity, unswerving loyalty and broad fair-mindedness won our affections, regard and esteem to a superlative degree. His unexpected passing is a tremendous loss, not only to the Commission, but to the country as a whole.

"Were we to follow our personal wishes and inclinations, we should suspend business affairs for a time, but the demands of the public service are such as to lead us to forego those inclinations and to proceed with the work, knowing that no formal action which we could take would add to the honor and esteem which he so fully and ably earned, and realizing that neither formal action nor words could adequately express the profound sorrow that has entered deeply into each of our hearts, and that can never be overcome."

been observed is ascribable to the unquestionable moral authority which Mr. Eastman exercised. He did not preach, but rather carried into action, his unalloyed patriotism, always putting the national interest ahead of partisan and selfish considerations; and those with whom he came in contact were, to a more or less degree, infected with this quality of his.

A Uniter in a Time of Division

Of his career as an Interstate Commerce Commissioner, little detail can here be given of the vast subject matter covered in a quarter-century of distinguished consideration of economic issues. He did not always guess right, but he always sought to do so, according to his lights—and these were his country's welfare and not his concern for his professional advancement, or even for retention of his job by reappointment. But, whatever the merits or demerits of his judgment on particular issues, it was the attitude of mind and heart which he brought to his duties, especially in recent years, by which he made his most profound, if intangible, contribution to orderly thought and policy on transportation questions. His unusual, almost unique, quality was that of a catalyst of the fellow-feeling in men—an attribute sorely needed when major contemporary social forces are centrifugal and sharply divisive.

Finally, but by no means least important of this great man's eminent qualities, was his pervasive sense of humor. He rarely made a speech, rendered a decision, handed down a comment from the bench, testified before a committee of Congress, or engaged in a conversation when he did not provoke chuckles from his auditors by a sly and kindly wit which pleased his hearers even when, as was usual, they themselves were the targets of it. Controversialists in transportation took criticism from him almost as good-naturedly as they would receive praise from other quarters—so kindly was always his intent.

A characterization of this noble leader in government and transportation was made by R. V. Fletcher, vice-president of the Association of American Railroads, in an address to the Economic Club of New York on January 26. What Judge Fletcher then said could doubtless be called the echo of the sentiments of the whole transportation industry, except that it is not all as articulate as Mr. Fletcher. He said:

Judge Fletcher's Appraisal

"Looking at the roster of men prominent in official life, I think I can say with confidence that Mr. Eastman's name leads all the rest in his single-minded and wholehearted devotion to the public service. As a member of the Massachusetts Public Service Commission, as a member of the Interstate Commerce Commission for more than a generation, as Federal Co-ordinator under the Emergency Transportation Act of 1933, and finally as Director of the Office of Defense Transportation, perhaps the crowning honor of a distinguished career, he commands the confidence of the country as a wise and disinterested administrator, who works at his tasks with astonishing diligence, who brings to his exacting duties a wealth of rich experience and who impresses all of us with his poise, his freedom from narrow prejudices, his unfailing courage and his sincere devotion to the highest ideals of public service.

"He has grown in stature with the march of the years and the seasoning of experience has hammered him in such a fashion as to give him that practical conception of men and affairs so essential to the successful handling of important issues. All of us connected with transportation instinctively look to him for guidance, with absolute confidence in his integrity and trusting implicity in his ample endowment of common sense. Among other qualities that excite admiration is his capacity for clear statement, couched in simple language that all of us can understand. He eschews the use of vague and obscure generalities, so characteristic of many so-called leaders of public opinion, who seem to strive to leave us in a foggy atmosphere of uncertainty as to real objectives."

The Power Commission's Resolution

The Federal Power Commission on March 15 adopted the following resolution:

"The members of the Federal Power Commission have, with deep regret and a keen sense of personal loss, learned of the untimely death of Joseph Bartlett Eastman, member of the Interstate Commerce Commission and Director of the Office of Defense Transportation.

"Throughout his public career in Massachusetts and his 25 years' service on the Interstate Commerce Commission, his integrity, intellectual capacity, diligence, and unceasing devotion to the public interest have brought him widespread recognition. His successful performance of the difficult tasks and responsibilities which have been his as Director of the Office of Defense Transportation during the period of the war emergency has constituted a national service of incalculable value. These accomplishments, together with his modesty and sweetness of character which have so endeared him to those who have known and worked with him, have made his career a genuine inspiration to his fellow public servants.

"Be it resolved, therefore, that this expression of respect, affection, and regret be spread upon the records of the Commission and that copies be sent to the Interstate Commerce Commission, to the Office of Defense Transportation and to Miss Elizabeth Eastman."

C. D. Young Named Acting Director

It was said at the White House that President Roosevelt had heard with deep regret of Mr. Eastman's death. The President's secretary, Stephen Early, explained that Mr. Eastman on February 19 had telephoned him to say that his doctors, under whose care he had been for the past two years because of angina pectoris attacks, had told him that he must go to a hospital for a rest of at least two months. In view of the fact that he would have to be absent from his office that long, or even longer, he offered to submit his resignation as director of the O. D. T. if the President so wished.

In reply, the President the same day sent the following note by messenger to Mr. Eastman at Emergency Hospital, Washington:

DEAR JOE: I am so sorry to hear that you are feeling somewhat below par. Your health is the primary concern and must receive every consideration.

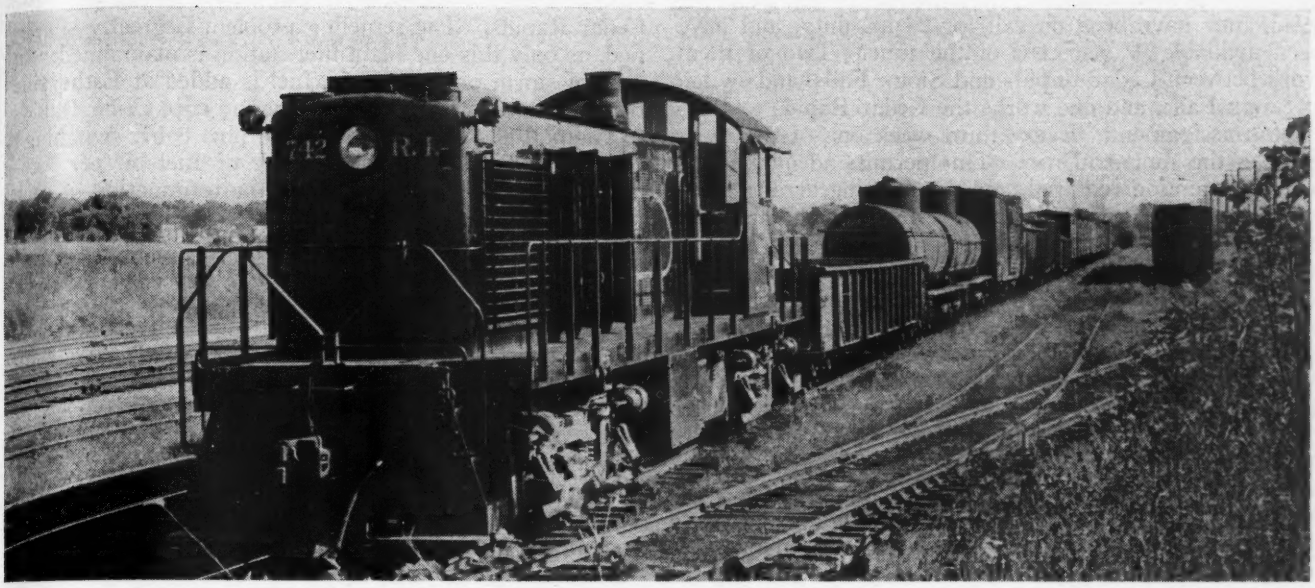
Follow strictly the doctor's orders, and take that much needed rest. Do not for a moment think of resigning. Get yourself back in good form, for the job needs you and the country needs you.

With every good wish,

Very sincerely yours,

FRANKLIN DELANO ROOSEVELT.

Brig. Gen. C. D. Young, heretofore deputy director of the O. D. T., has been named acting director by President Roosevelt—to head the agency until a permanent successor to Mr. Eastman is named.



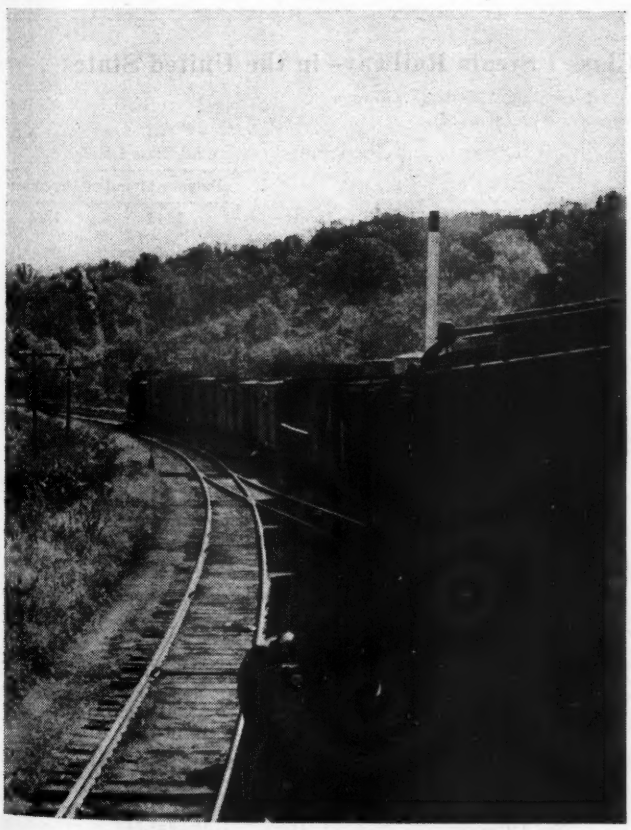
Locomotive No. 742 Switching at West Liberty—Interchange Point on the Des Moines Division Main Line

Diesels in Road and Yard Service

Swing-shift operation balances duty requirements and assures adequate time for inspection and maintenance

By L. W. Downey

Superintendent of Automotive Equipment
The Chicago, Rock Island & Pacific



By Use of the Combination Unit, More Efficient Utilization of Motive Power Is Possible for These Diesel-Electrics Do Switching Work Between Road Trips—This View Is from the Engineman's Station

THE Rock Island put four 1,000-hp. Diesel-electric road-switching locomotives in service during the summer of 1941, and assigned them to a 900-mile round-trip freight run between Burlington, Iowa, and Sioux Falls, S. D. This single-track line was formerly handled by seven steam locomotives which, due to the Diesels, were released for badly needed service elsewhere. Refueling and maintenance of the Diesels was handled at Burlington between runs, as they were on call for 24-hr. service.

The facilities were later removed to Cedar Rapids, Iowa, as the result of a series of events, which began with the government's call in 1942 for Diesel-electric locomotives for war service overseas. The Rock Island relinquished these four locomotives and immediately purchased four more identical 1,000-hp. Alco-G. E. combination units to replace them. Three locomotives were assigned to the Burlington-Sioux Falls operations, and the other one to freight service between St. Joseph, Mo., and Topeka, Kans.

It was reasoned that by breaking up the run, three Diesels could handle the work in Iowa. So far, they have; and in addition have absorbed the increasing war loads. Cedar Rapids was selected as the central terminal and as the point for refueling and maintenance. Improved efficiency and faster handling of freight are two of the direct benefits.

Since these Diesels were put into service early in May,

1943, they have been on call for 24-hr. duty, and have been available 97 per cent of the time. Two of them work between Cedar Rapids and Sioux Falls, and switch at Sioux Falls, and one works the Cedar Rapids to Burlington assignment. Every third week one of the units goes on the short-end run. This permits adequate time for any attention required, and the rotating arrangement has been very successful. Their high availability has made possible a very favorable freight schedule in both locations.

Under the present arrangement, the locomotive making a daily round trip of 200 miles between Cedar Rapids and Burlington is in actual road service approximately 14 hours a day pulling trains of 800 to 1,350 tons over grades that are fairly easy. The exception is 0.5 per cent to 1.18 per cent over Latty Hill about 8 miles north of Burlington. There are many curves in the first 15 miles north of Burlington because the right-of-way parallels the Mississippi River. At Columbus Junction this line crosses the Rock Island Division main line between Chicago and Omaha.

Only one severe grade is encountered in the 633-mile round trip between Cedar Rapids and Sioux Falls. This is another hill (Ocheyedon Hill) in the northwest corner of Iowa where, although the grade is less than 1 per cent, the pull is a long one against a curving upgrade, and the train at this point is generally at its maximum of 1,350 allowable trailing tons. Other grades in this line are up to 1 per cent, and the track is fairly tangent. The line passes through 15 crossings and interchange points of seven other railroads. In Sioux Falls the locomotives are assigned to 8-hr. switching before starting the return trip to Cedar Rapids; they also switch at the Iowa Falls and Estherville Yards when necessary.

Inspection, maintenance, and fueling is handled at Cedar Rapids. The refueling problem is greatly simplified, as only this one main fuel station is maintained. In case of storm or emergency, fuel is added at Estherville from an auxiliary station. The round trip, Cedar Rapids to Sioux Falls (28 hr. road time plus 8 hr. switching) requires from 1,000 to 1,100 gal. of fuel oil per locomotive, and they are refueled at the termination of each round trip. The engine operating at Burlington is refueled at five-day intervals.

Locomotive No. 745, making the 180-mile round trip daily between St. Joseph and Topeka, released two steam locomotives which are now used more effectively elsewhere. Its service is similar to that between Cedar Rapids and Burlington except that, in addition, it is assigned to switching while in St. Joseph. It is also on call for 24-hr. service, both on roadwork and for switching. Inspection, maintenance, and refueling (every five days) is done at Topeka.

But for these Diesel-electrics, and others all over the system, the motive-power problem could have been much more serious. As it is, their use has enabled the Rock Island to make more effective use of manpower and the released steam units, and at the same time has saved the expense and overburden of maintaining expanded facilities for steam-locomotive operation in places where the full efficiency of steam motive power would be hard to realize.

Both the Diesel-electric and the steam locomotive have definite places on America's railroads—each for a particular job, as determined by economic suitability.

Certainly, the combination road-switching units on the Rock Island have proved that theirs is the most versatile motive power that could be put on the assignments they are handling, and they have always made their regular runs.

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 132 reports (Form IBS) representing 136 steam railways
(Switching and Terminal Companies Not Included)

Income Items	All Class I Railways — For the month of December 1943	For the month of December 1942	For the twelve months of 1943	For the twelve months of 1942
1. Net railway operating income	$74,674,955	$174,379,895	$1,359,976,507	$1,484,469,669
2. Other income	40,096,762	39,332,190	201,322,897	182,565,843
3. Total income	114,771,717	213,712,085	1,561,299,404	1,667,035,512
4. Miscellaneous deductions from income	12,841,797	14,952,760	41,011,428	48,903,278
5. Income available for fixed charges	101,929,920	198,759,325	1,520,287,976	1,618,132,234
6. Fixed charges:				
6-01. Rent for leased roads and equipment	9,142,245	17,332,348	165,465,938	181,122,978
6-02. Interest deductions[1]	34,551,543	67,116,023	429,792,121	473,521,683
6-03. Other deductions	254,882	135,564	1,616,655	1,436,769
6-04. Total fixed charge	43,948,670	84,583,935	596,874,714	656,081,430
7. Income after fixed charges	57,981,250	114,175,390	923,413,262	962,050,804
8. Contingent charges	23,166,906	32,892,460	49,425,112	58,272,346
9. Net income	34,814,344	81,282,930	873,988,150	903,778,458
10. Depreciation (Way and structures and Equipment)	26,085,855	18,926,574	315,961,803	246,251,724
11. Amortization of defense projects	16,896,855	15,227,065	145,582,695	91,958,827
12. Federal income taxes	49,550,028	42,584,734	1,334,894,088	755,369,014
13. Dividend appropriations:				
13-01. On common stock	24,051,595	22,723,979	179,415,165	167,825,339
13-02. On preferred stock	5,237,131	5,159,968	36,637,713	34,427,287
Ratio of income to fixed charges (Item 5 ÷ 6-04)	2.32	2.35	2.55	2.47

[1] Represents accruals, including the amount in default.

Selected Asset and Liability Items	All Class I Railways — Balance at end of December 1943	Balance at end of December 1942
20. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$594,165,373	$538,894,683
21. Cash	1,229,302,861	919,046,733
22. Temporary cash investments	1,553,460,276	812,525,449
23. Special deposits	228,826,039	141,683,366
24. Loans and bills receivable	215,429	314,733
25. Traffic and car-service balances—Dr.	39,612,123	37,025,330
26. Net balance receivable from agents and conductors	159,731,895	156,966,700
27. Miscellaneous accounts receivable	656,926,199	444,740,368
28. Materials and supplies	532,720,734	503,900,792
29. Interest and dividends receivable	21,772,555	17,561,344
30. Rents receivable	1,810,939	1,508,664
31. Other current assets	44,002,745	13,059,947
32. Total current assets (items 21 to 31)	$4,468,381,795	$3,048,333,426
40. Funded debt maturing within 6 months[2]	$104,906,859	$143,555,765
41. Loans and bills payable[3]	16,520,120	16,178,304
42. Traffic and car-service balances—Cr.	203,825,761	121,156,796
43. Audited accounts and wages payable	490,751,908	327,804,409
44. Miscellaneous accounts payable	115,173,959	76,405,795
45. Interest matured unpaid	76,319,405	83,839,177
46. Dividends matured unpaid	15,240,047	15,424,046
47. Unmatured interest accrued	52,289,789	59,477,693
48. Unmatured dividends declared	21,570,763	21,817,697
49. Unmatured rents accrued	17,070,684	17,121,097
50. Accrued tax liability	1,726,060,709	978,949,204
51. Other current liabilities	183,099,255	66,773,337
52. Total current liabilities (items 41-51)	$2,917,922,400	$1,784,947,555
53. Analysis of accrued tax liability:		
53-01 U. S. Government taxes	$1,540,214,967	$859,143,698
53-02 Other than U. S. Govt. taxes	185,845,742	119,805,506

[2] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.

[3] Includes obligations which mature not more than 1 year after date of issue.

1943 Net Income Dropped to $873,988,150

WASHINGTON, D. C.

THE Bureau of Transport Economics and Statistics of the Interstate Commerce Commission on March 13 made public its compilation of selected income items for the calendar year 1943, showing last year's net income of 136 Class I railroads to have been $873,988,150, as compared to the previous year's $903,778,458. Selected income and balance sheet items for the month of December and for the year were released at the same time.

In 1943 eleven roads reported net deficits, aggregating $6,423,581, while 13 roads reported net deficits totaling $10,820,841 in 1942. In addition, there were 5 roads in 1943 and 4 in 1942 whose net income or deficit was absorbed by the controlling company, leaving the figure reported zero.

For all Class I roads the decrease in net income for the year 1943 as compared to 1942 was $29,790,308, but for the 3 months ended with December the decrease in net income in the 1943 period, as compared to the same period in the year preceding, was $151,394,726.

The tabulation of selected income items now includes federal income taxes paid and dividends appropriated by each Class I road for the years 1943 and 1942. These statistics were not presented in this form in previous years.

Such taxes increased in 1943 to a total of $1,334,894,088 from the 1942 total of $755,369,014, while 1943 dividend appropriations of $216,052,878 represented only a small increase over the 1942 total, which was $202,252,626.

Selected Income Items by Regions and Districts, Class I Steam Railways, Calendar Years 1943 and 1942

Region and railway	Net Railway Operating Income		Net Income		Federal Income Taxes		Dividend Appropriations	
	1943	1942	1943	1942	1943	1942	1943	1942
United States—Total	$1,359,976,507	$1,484,469,669	$873,988,150	$903,778,458	$1,334,894,088	$755,369,014	$216,052,878	$202,252,626
Eastern District—Total	484,099,284	536,732,548	288,384,815	303,932,827	374,061,150	244,280,755	69,425,410	67,961,452
New England Region—Total	49,996,936	53,809,234	32,967,702	34,457,598	22,505,957	19,062,572	552,870	81,720
Bangor & Aroostook	1,790,160	1,516,473	1,221,745	843,109	1,263,390	509,975	334,950	.....
Boston & Maine	11,877,358	15,821,788	7,142,072	10,497,571	5,255,000	3,893,000	.....	.....
Canadian National Lines in New England	1,243,546	*1,251,151	3,167	270,211	.....	.....	.....	.....
Canadian Pacific Lines in Vermont	*1,021,061	*671,124	.....	70,336	.....	.....	.....	.....
Central Vermont	1,460,293	1,477,894	*142,916	78,245	134,954	37,932	.....	.....
International Ry. Co. of Maine	2,168,500	1,577,310	.....	28,359	.....	.....	.....	.....
Maine Central	2,346,408	3,039,819	1,124,487	1,774,442	1,232,098	1,063,809	217,920	81,720
New York Connecting	1,499,935	1,690,031	603,866	787,050	372,041	290,000	.....	.....
New York, New Haven & Hartford[2]	30,791,940	30,012,844	22,901,437	19,912,114	14,248,474	13,267,856	.....	.....
Rutland[1]	326,949	595,350	113,844	196,161	.....	.....	.....	.....
Great Lakes Region—Total	197,166,485	203,809,378	125,524,606	111,575,779	160,460,507	107,435,312	23,570,051	20,205,376
Ann Arbor	773,990	599,894	508,565	553,022	640,702	258,108	.....	.....
Cambria & Indiana	575,069	703,485	541,388	553,662	692,557	951,128	510,000	510,000
Delaware & Hudson	11,132,460	10,423,919	8,004,630	4,775,708	.....	2,285,000	.....	.....
Delaware, Lackawanna & Western	11,181,280	11,648,816	4,688,759	5,149,485	4,400,986	4,160,000	.....	.....
Detroit & Mackinac	*56,742	341,918	*147,709	234,470	25,103	7,000	.....	.....
Detroit & Toledo Shore Line	681,936	731,656	619,419	615,752	550,488	581,831	690,000	480,000
Erie	19,807,690	24,372,831	10,280,265	14,902,736	17,555,304	10,717,656	4,460,811	4,405,014
Grand Trunk Western	6,712,043	5,948,489	2,455,025	1,570,405	1,534,443	310,000	.....	.....
Lehigh & Hudson River	284,349	453,986	309,784	478,338	381,052	564,147	188,280	376,560
Lehigh & New England	1,726,011	1,475,561	1,013,674	1,144,511	206,763	742,213	952,000	952,000
Lehigh Valley	13,477,689	13,117,576	6,633,008	6,373,607	4,969,802	4,599,684	.....	.....
Monongahela	1,215,284	1,504,772	717,234	982,487	821,190	1,047,772	374,700	374,000
Montour	674,685	819,091	646,983	776,121	510,977	561,214	408,000	510,000
New York Central[3]	88,524,297	90,399,495	62,734,050	49,082,183	74,697,279	41,579,081	9,671,091	6,447,394
New York, Chicago & St. Louis	13,265,201	13,222,981	9,188,026	8,690,571	22,500,000	19,075,000	.....	.....
New York, Ontario & Western[3]	209,089	200,031	*1,210,459	*1,124,512	.....	.....	.....	.....
New York, Susquehanna & Western[3]	1,089,267	916,410	500,586	268,934	333,725	111,032	.....	.....
Pere Marquette	6,003,087	6,275,279	3,619,520	3,569,066	3,782,655	1,208,094	.....	.....
Pittsburgh & Lake Erie	5,873,225	7,378,279	4,360,906	5,366,448	6,160,180	6,792,524	4,318,250	4,750,075
Pittsburgh & Shawmut	234,303	329,087	134,916	*121,654	94,575	.....	.....	.....
Pittsburgh & West Virginia	1,883,294	1,787,584	1,420,713	1,278,965	295,773	243,515	.....	.....
Pittsburgh, Shawmut & Northern[1]	121,310	106,593	*46,481	*44,598	.....	.....	.....	.....
Wabash	11,777,668	11,051,645	8,551,804	6,500,072	20,306,953	11,640,314	1,997,819	1,399,633
Central Eastern Region—Total	236,935,863	279,113,936	129,892,507	157,899,450	191,094,686	117,782,871	45,301,589	47,674,356
Akron, Canton & Youngstown[2]	975,585	644,810	241,131	154,192	413,345	159,050	.....	.....
Baltimore & Ohio	52,167,469	69,558,718	11,357,783	16,997,765	28,619,769	9,676,671	.....	.....
Bessemer & Lake Erie	2,600,905	3,635,912	1,058,766	2,171,546	2,472,242	3,964,139	500,000	1,000,000
Central of New Jersey[3]	5,190,600	9,321,852	712,860	5,046,664	1,210,000	.....	.....	.....
Chicago & Eastern Illinois	3,397,266	3,787,932	1,846,422	2,035,370	3,569,500	1,500,000	939,375	226,485
Chicago & Illinois Midland	993,368	997,706	658,332	657,725	1,144,749	1,166,200	250,000	180,000
Chicago, Indianapolis & Louisville[2]	2,909,831	2,398,656	1,535,475	1,001,522	526,128	216,000	.....	.....
Detroit, Toledo & Ironton	2,458,734	2,158,996	1,940,433	1,625,718	1,086,674	817,815	1,226,660	1,042,661
Elgin, Joliet & Eastern	1,946,923	3,681,119	1,239,635	2,959,491	2,797,500	4,980,891	1,400,000	3,820,000
Illinois Terminal	1,557,310	2,068,328	1,015,314	1,505,976	1,925,300	1,096,000	500,000	500,000
Long Island	3,736,092	2,002,737	2,593,419	*15,047	1,107,218	.....	.....	.....
Missouri-Illinois[2]	449,727	550,984	443,617	546,745	785,000	925,000	.....	.....
Pennsylvania	127,546,411	145,278,344	85,418,484	101,468,793	120,367,830	74,784,264	32,919,385	32,919,385
Pennsylvania-Reading Seashore	843,339	*204,517	109,956	*1,084,508	392,041	390,340	.....	.....
Reading	17,924,982	21,721,740	11,821,311	15,291,000	13,886,000	9,140,000	3,778,329	4,197,985
Staten Island Rapid Transit	1,028,583	417,611	.....	.....	216,700	.....	.....	.....
Western Maryland	7,464,076	7,311,848	4,509,440	4,162,230	3,634,690	2,666,501	1,241,947	1,241,947
Wheeling & Lake Erie	3,744,662	3,781,160	3,390,129	3,374,268	6,940,000	6,300,000	2,545,893	2,545,893
Southern District—Total	273,012,076	292,565,937	196,172,851	190,792,942	350,170,257	218,095,029	72,997,717	69,087,737
Pocahontas Region—Total	74,816,100	74,852,009	64,777,840	64,758,916	105,841,600	90,833,742	48,097,099	48,253,352
Chesapeake & Ohio	37,216,148	39,643,585	31,358,680	33,153,437	48,943,692	39,254,906	27,258,320	27,410,794
Norfolk & Western	24,908,875	23,829,764	22,807,569	22,499,513	39,728,725	37,375,000	14,957,183	14,966,159
Richmond, Fredericksburg & Potomac	5,203,854	4,008,903	5,307,285	4,015,053	12,895,967	9,683,396	1,077,146	1,071,949
Virginia	7,487,223	7,369,757	5,304,306	5,090,913	4,273,216	4,520,440	4,804,450	4,804,450
Southern Region—Total	198,195,976	217,713,928	131,395,011	126,034,026	244,328,657	127,261,287	24,900,618	20,834,385
Alabama Great Southern	3,000,736	2,409,124	3,710,995	3,042,268	6,195,000	5,585,000	2,017,863	2,017,863
Atlanta & West Point	467,748	612,244	492,984	626,907	1,139,219	603,739	147,816	221,724
Atlanta, Birmingham & Coast	514,982	305,611	552,474	317,978	526,806	215,788	.....	.....
Atlantic Coast Line	15,704,857	21,195,567	17,480,959	22,619,355	42,500,000	20,650,000	2,480,117	1,656,690
Central of Georgia[2]	7,345,556	7,711,979	1,940,663	3,983,779	5,694,782	678,488	.....	.....
Charleston & Western Carolina	800,097	873,595	520,336	590,088	585,000	420,000	144,000	144,000
Cincinnati, New Orleans & Texas Pacific	6,440,820	5,222,964	4,700,164	3,432,478	8,994,000	7,114,000	3,710,670	3,710,670
Clinchfield	5,232,725	5,832,619	.....	.....	695,872	697,531	.....	.....

(Table continued on next page)

Selected Income Items by Regions and Districts, Class I Steam Railways, Calendar Years 1943 and 1942

Region and railway	Net Railway Operating Income		Net Income		Federal Income Taxes		Dividend Appropriations	
	1943	1942	1943	1942	1943	1942	1943	1942
Southern Region—Continued								
Columbus & Greenville	$54,183	$55,590	$73,915	$84,820	$29,650	$126,360	.....	$35,000
Florida East Coast[2]	10,173,479	7,873,959	4,954,411	5,083,012	3,369,975	130,000	.....	.....
Georgia R. R.—Lessee Organization	3,564,793	3,678,644	.....	.....	.....	.....	.....	.....
Georgia & Florida[1]	205,915	128,104	*556,968	*597,810	.....	.....	.....	.....
Georgia Southern & Florida	1,189,382	995,800	780,291	644,271	1,520,000	501,500	.....	.....
Gulf & Ship Island	*35,581	262,705	*64,018	.....	.....	.....	.....	.....
Gulf, Mobile & Ohio	5,918,935	5,648,668	4,328,169	4,030,217	2,806,900	2,603,860	$1,417,176	707,992
Illinois Central	33,867,434	30,385,730	23,581,567	17,226,679	24,237,718	9,043,000	.....	.....
Louisville & Nashville	25,513,401	23,732,085	21,213,757	19,407,582	56,276,575	38,158,512	8,190,000	8,190,000
Mississippi Central	324,732	397,262	211,037	282,115	141,926	67,687	.....	.....
Nashville, Chattanooga & St. Louis	5,083,496	5,702,913	3,696,227	4,319,615	8,096,166	3,535,974	767,946	767,946
New Orleans & Northeastern	1,709,465	1,413,966	1,446,927	1,110,448	3,983,000	3,479,000	.....	.....
Norfolk Southern	943,296	1,196,204	507,342	702,101	364,587	577,380	118,630	.....
Seaboard Air Line[1]	28,704,006	33,945,971	15,796,841	*2,819,263	16,000,000	.....	.....	.....
Southern	35,744,757	46,265,818	23,528,589	33,388,868	56,623,000	29,325,000	5,596,400	3,000,000
Tennessee Central	712,258	489,323	480,208	245,991	287,611	134,637	70,000	52,500
Western of Alabama	659,911	805,357	618,976	765,815	1,194,472	847,831	240,000	330,000
Yazoo & Mississippi Valley	4,354,593	10,572,126	1,399,165	7,546,712	3,066,398	2,766,000	.....	.....
Western District—Total	602,865,147	655,171,184	389,430,484	409,052,689	610,662,681	292,993,230	73,629,751	65,203,437
Northwestern Region—Total	193,099,593	162,895,624	115,482,882	80,360,926	87,046,643	72,785,655	19,792,157	13,736,260
Chicago & North Western[2]	40,791,747	24,939,999	26,149,889	9,964,239	1,200,000	9,337,322	.....	.....
Chicago Great Western	3,723,331	3,702,544	2,705,827	2,617,491	4,209,000	1,880,000	1,372,899	457,630
Chicago, Milwaukee, St. Paul & Pacific[2]	50,668,954	34,504,654	29,413,623	12,174,831	14,295,000	15,282,000	.....	.....
Chicago, Saint Paul, Minneapolis & Omaha	3,898,532	3,181,322	1,453,270	704,457	786,000	.....	.....	.....
Duluth, Missabe & Iron Range	9,531,111	9,174,633	8,652,841	8,203,322	9,558,080	15,093,175	10,281,250	5,140,625
Duluth, South Shore & Atlantic[2]	1,000,744	946,969	132,084	60,833	.....	.....	.....	.....
Duluth, Winnipeg & Pacific	395,871	170,943	578	113,678	.....	.....	.....	.....
Great Northern	28,562,967	39,445,076	19,590,548	29,054,021	35,183,235	18,845,802	4,997,798	4,997,795
Green Bay & Western	562,841	266,615	491,446	196,045	184,759	125,817	125,000	125,000
Lake Superior & Ishpeming	670,998	865,725	676,782	871,624	408,467	787,315	535,500	535,500
Minneapolis & St. Louis	3,478,557	3,129,233	421,245	*920,547	215,000	.....	.....	.....
Minneapolis, St. Paul & Sault Ste. Marie[2]	8,398,092	7,871,134	*1,340,553	*2,633,595	1,745,437	1,184,914	.....	.....
Northern Pacific	36,423,455	27,463,103	25,520,431	16,303,918	17,408,120	9,959,853	2,479,710	2,479,710
Spokane International	332,495	381,784	208,353	250,339	253,545	289,457	.....	.....
Spokane, Portland & Seattle	4,659,898	6,851,890	1,406,518	3,400,270	1,600,000	.....	.....	.....
Central Western Region—Total	277,957,758	335,406,710	197,455,905	229,441,758	373,795,642	168,663,005	51,013,396	48,729,163
Alton[2]	3,782,283	3,654,310	1,950,661	2,180,330	5,498,135	4,437,112	.....	.....
Atchison, Topeka & Santa Fe[4]	65,839,748	83,547,609	57,440,364	73,664,352	120,088,414	55,547,638	20,771,000	21,984,530
Chicago, Burlington & Quincy	35,762,487	37,173,683	28,231,264	28,646,920	44,028,670	16,307,822	5,125,161	5,125,161
Chicago, Rock Island & Pacific[2]	36,794,983	36,557,111	24,126,918	22,234,225	21,100,000	5,100,000	.....	.....
Colorado & Southern	3,182,651	2,729,605	2,588,219	1,592,849	762,752	*18,183	.....	.....
Colorado & Wyoming	331,342	276,738	259,919	195,175	209,246	356,200	.....	125,000
Denver & Rio Grande Western[2]	12,050,824	17,229,206	5,907,760	11,306,966	6,812,300	1,790,000	.....	.....
Denver & Salt Lake	630,665	1,199,347	4,106	83,910	339	11,300	.....	.....
Fort Worth & Denver City	3,972,146	3,637,525	2,692,006	2,477,677	2,528,717	286,017	.....	.....
Nevada Northern	173,247	169,613	177,321	176,082	94,054	117,737	250,000	400,000
Northwestern Pacific	574,802	1,038,295	*780,526	*315,432	.....	.....	.....	.....
Southern Pacific	52,736,691	76,829,467	12,009,009	18,224,513	69,647,600	38,380,865	7,545,526	3,772,763
Southern Pacific System[5]	77,242,817	102,501,810	58,359,821	80,282,856	95,852,617	52,326,929	7,545,526	3,772,763
Toledo, Peoria & Western[6]	2,343,144	1,033,024	2,292,452	981,194	.....	.....	.....	.....
Union Pacific	41,205,855	61,024,720	45,293,259	62,083,985	103,000,000	42,526,202	17,321,709	17,321,709
Utah	145,473	198,405	57,752	109,504	35,301	50,380	.....	.....
Western Pacific[2]	18,431,417	9,108,052	15,205,421	5,799,508	*9,886	3,769,915	.....	.....
Southwestern Region—Total	131,807,796	156,868,850	76,491,697	99,250,005	149,820,396	51,544,570	2,824,198	2,738,014
Beaumont, Sour Lake & Western[3]	1,413,619	2,381,638	1,262,322	2,209,019	2,649,433	637,000	.....	.....
Burlington—Rock Island	533,501	198,121	*207,673	*577,059	.....	67	.....	.....
International-Great Northern[2]	4,921,149	5,786,908	2,341,135	3,162,517	3,240,000	.....	.....	.....
Kansas City Southern	4,989,139	4,729,810	2,848,533	2,541,785	6,990,000	4,153,000	420,000	420,000
Kansas, Oklahoma & Gulf	983,111	816,734	775,177	607,937	323,376	442,267	531,498	445,314
Louisiana & Arkansas	2,230,217	2,475,312	1,281,949	1,488,389	2,916,720	845,000	300,000	300,000
Midland Valley	412,936	380,886	150,189	60,338	.....	*890	.....	.....
Missouri & Arkansas	34,649	51,510	27,256	42,008	7,717	36,178	.....	.....
Missouri-Kansas-Texas	9,227,193	10,471,483	5,115,971	5,880,546	4,952,000	420,000	.....	.....
Missouri Pacific[2]	34,574,379	49,309,302	16,591,415	30,649,668	49,000,000	11,320,000	.....	.....
New Orleans, Texas & Mexico[2]	985,298	2,763,038	*1,702,673	*57,894	4,990,556	730,000	.....	.....
Oklahoma City-Ada-Atoka	390,313	302,414	350,848	264,340	217,112	181,219	.....	.....
St. Louis, Brownsville & Mexico[2]	2,573,727	3,528,799	1,904,403	2,864,968	4,934,909	955,000	.....	.....
St. Louis-San Francisco[2]	22,488,529	25,874,296	10,667,728	13,366,624	7,871,000	60,000	.....	.....
St. Louis, San Francisco & Texas	1,097,518	923,696	919,679	809,017	703,000	316,771	.....	.....
St. Louis Southwestern[2]	10,677,148	8,615,365	7,543,273	5,673,577	17,873,286	11,399,883	.....	.....
San Antonio, Uvalde & Gulf[2]	*15,736	*269,340	*223,605	*508,922	.....	.....	.....	.....
Texas & New Orleans	24,506,126	25,672,343	20,306,969	21,492,284	26,205,017	13,946,064	.....	.....
Texas & Pacific	9,244,887	12,401,106	6,155,859	9,003,541	16,838,435	6,103,011	1,572,700	1,572,700
Texas Mexican	540,093	455,429	382,942	277,322	107,835	.....	.....	.....

* Deficit or other reverse item.
[1] Report of receiver or receivers.
[2] Report of trustee or trustees.
[3] Includes Boston & Albany, lessor to New York Central.
[4] Includes Atchison, Topeka & Santa Fe, Gulf, Colorado & Santa Fe, and Panhandle & Santa Fe.
[5] Data not included in totals. Includes Southern Pacific Company, Texas & New Orleans, and leased lines.
[6] Operated by Federal Manager. Taxes accrued do not include any provision for Federal Income Taxes.

Unions Duplicating Managements' Mistakes

Gentlemen of labor, I must accuse you of not being very original. How faithfully you have imitated us of management! From 1933 to 1942 you rode high. You were tops. A friendly administration in Washington. All sorts of favors fed to you daily from the Washington political table. Management weak and intimidated. So what did you do with your power? On the economic side you gave yourselves a labor boom, regardless of the consequences to any other element in the population. On the moral side you produced men like Browne and Bioff and Scalise who gave all labor a black eye.

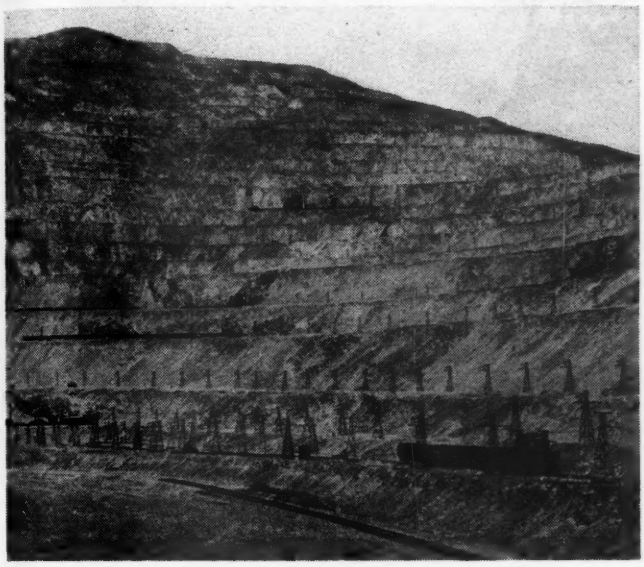
You forgot the very thing we forgot: In the architecture of American society it's just three jumps from the master bedroom to the dog-house. Now the dog-house is yawning for you.

And don't think that you can duck any of it by yelling "anti-labor" and "reactionary" and "Fascist." We didn't escape any blows coming our way by yelling "anti-business" and "bureaucrat" and "Communist." You can't stop hell with vocabulary. When the devil is after you the only recipe is repentance and good works. So how about a few good works?

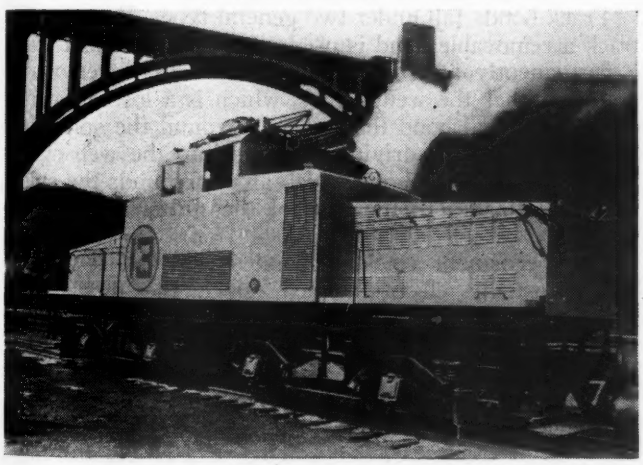
—President Eric Johnston of the Chamber of Commerce of the U. S.

Electric Traction in Copper Mines

Electric locomotives are used in spite of the fact that the overhead contact system must be portable



Typical Open-Pit Copper Mine Showing Benches and Electric Contact System



Electric Locomotive Equipped with Batteries for Operation Beyond the Limits of the Overhead Contact System

THE characteristics of electric locomotives have been found so advantageous in the strip mining of copper that they are now being used extensively in spite of the fact that much of the overhead contact system must be portable. The mining is done by large shovels working on a series of terraces or benches. The cars receiving the loads from the shovels are moved along these benches and as the uphill bank is dug away both tracks and contact systems must be moved laterally across the bench toward the receding bank. Electric locomotives are used because of their ruggedness and large overload capacity and also because an adequate supply of good water for steam locomotives is frequently difficult to obtain in the areas where the mining is done.

A symposium on the subject was presented at the annual meeting of the American Institute of Electrical Engineers at New York on January 25, 1944. This consisted of a paper, "Electrification of Large Open-Pit Copper Mines," by L. W. Birch, engineer, transportation department, Ohio Brass Company, Mansfield, Ohio; a second paper, "Modern Electric Locomotives In Open Pit Mine Haulage," by J. E. Borland and L. G. Riley, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.; and a motion picture, "Open Pit Copper Mining," presented by courtesy of the General Electric Company, Erie, Pa.

The transportation problem of a large strip mine involves the loading, hauling, and dumping of both ore and waste. These materials are loaded with large electric shovels operating on benches along the slope of a hill or pit. The ore is transported over main-line tracks to the reduction plant, while the waste is hauled to suitable dumps. All main-line tracks are permanent and are equipped with permanent overhead distribution systems. All bench and dump tracks are portable and are equipped with portable overhead distribution systems.

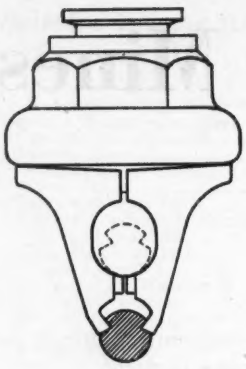
Sixty per cent of the world's copper is now obtained by open-pit mining of low-grade ore. Electrification of haulageways for open-pit mining is keeping pace with the expansion and is modernizing the transportation of heavy tonnages. Large capacities, necessitating heavy cars and heavy grades, demand short-period overloads. From the standpoint of locomotive capacity, rail size, dump-car capacity, and density of traffic, most open-pit electrifications compare in size with our large steam-road installations and hold an important place in the field of heavy traction.

Contact System

The portable overhead system is used at any location where it is necessary to move the track at frequent intervals. The tracks on the benches are moved towards the face as mining progresses, and the tracks along the waste dump are moved towards the shoulder of the dump as the dump is filled out. On the bench tracks, head clearance must be maintained for loading, since the dipper of the shovel reaches over the center line of track. Crane equipment is frequently operated over both the bench tracks and the dump tracks; therefore, overhead clearance is necessary over these tracks. The usual offset of trolley wire from the center of track is from 10 to 16 ft. Of course, the offset on the benches is on the side opposite the shovel.

Portable structures are usually steel, either constructed of fabricated shapes or pipe. Owing to the constant handling, a wooden structure does not have sufficient life and is easily splintered. The pipe structure is the simplest and requires less maintenance.

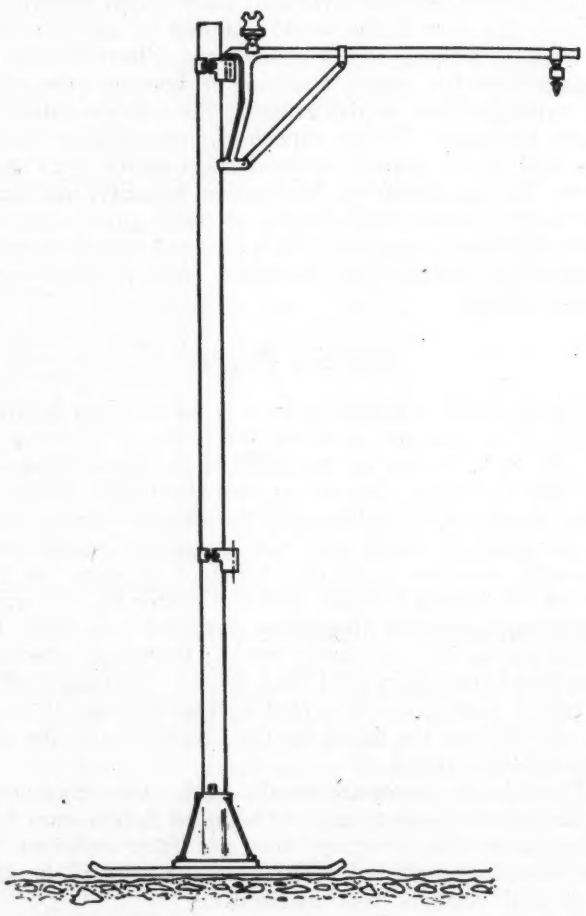
One of the simplest pipe structures is used on the Utah Copper Company operations at Bingham, Utah. This



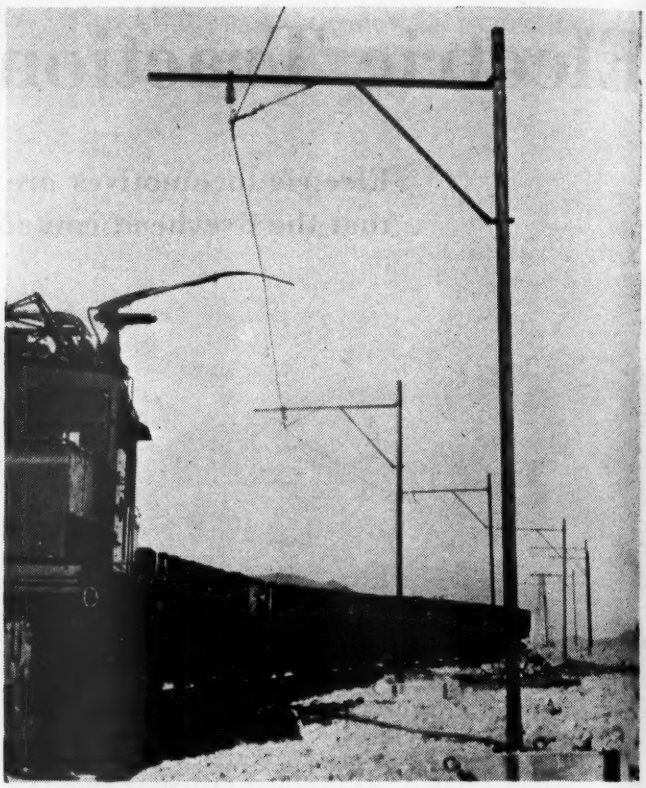
The Contact Wire Clip Is Provided with an Opening Which Supports the Wire When It Is Slacked for the Purpose of Moving the Supporting Structures

structure consists of a five-inch pipe embedded in a concrete footing and supporting, at its top, a bracket arm which in turn supports the trolley wire. The concrete footing is elongated, and is equivalent to a sled or stoneboat in contour. It is equipped with a large eye bolt for pulling and also can be shoved into position with a bulldozer. This type of portable structure is easily transported from one bench to another and can be moved readily as mining progresses.

A special type of trolley clamp is used for portable structures. This clamp provides not only the usual jaws for clamping the grooved trolley wire but also an opening above the jaws where the wire can be supported but not clamped. When the overhead system is in operation, the trolley wire is clamped in the lower part of the jaws and cannot be pulled through the jaws, but, while the structures are being moved, the trolley wire is held loosely in the opening above the clamps. Thus, the trolley wire is free to slide longitudinally when the poles



Side Elevation of a Tubular Supporting Structure



A Typical Form of Contact System and Offset Trolley As Used on the Benches

are moved to a new position. After the structures are in place the trolley wire is tensioned by pulling the free end. The wire is then dropped into the lower portion of the clamps, and the jaws are tightened on the wire.

Track bonds fall under two general types. For portable track a removable bond is used, and for permanent track a permanently attached bond is used. The removable bond is either the wedge type, which is a low-resistance copper-terminal bond that extends around the splice bar and is attached by driving a wedge into the web of the rail, or a temporary bond which also surrounds the splice bar and attaches to the base of the rail with large set screws.

The permanent track is bonded with short welded bonds, usually electric-welded, since the d.c. circuit may be utilized both for the initial installation and for maintenance. A 4/0 bond is sufficient for rails in the 90-100 lb. class, while the heavy main-line rail, usually 131 lb., is connected with two 4/0 bonds. Cross-bonds are placed at 500- to 1,000-ft. intervals, depending on the type of track. Closer spacing is used on the temporary tracks.

Electric Operation

A specific example of the advantages of open-pit electrification is found at the Bingham (Utah) mine of the Utah Copper Company. Here the number of loaded cars in an ore train has increased 25 per cent, and speed has increased 25 per cent. Therefore, fewer locomotives are necessary per shovel.

In general, with electric operation, there is less track wear due to the articulated locomotive, and there are fewer car derailments. With electrification there is no burning of wood crossties, an expense which was once very heavy in large mines. The electric locomotive does not require the transportation of fuel and water, an operation which added a large amount to the cost of haul-

The Offset Trolley and Contact System Allow Clearance for the Shovels Which Load the Cars

age. Enginemen have greater vision while operating in and out of the pits, and the elimination of smoke helps pit operation, since good visibility is a big factor in the operation of a mine.

At Bingham there are 65 locomotives and there is rarely a time when more than two are in the shop. The electric locomotive is not affected by bad water, and its "breathing apparatus" is not susceptible to change in altitude.

Typical examples of electric locomotives for use in open-pit copper mines are those used in the Morenci (Ariz.) mine of the Phelps Dodge Corporation.

The locomotive weight of 125 tons is used to permit hauling the maximum train of eleven 38.5 ton empty cars up the four per cent grades with an estimated adhesion of slightly over 19 per cent, and to provide by electric braking over 40 per cent of the retarding effort required with trains of eleven 128.5 ton loaded cars descending the four per cent grades. The cars in use have an empty weight of approximately 45 tons and carry from 90 to 100 tons of ore or waste.

Performance

Under present operating conditions, a typical round trip run between loading benches and the crusher is 9 miles, with 470 ft. change in elevation, and switchbacks involving four stops and reversals in each direction. The maximum round trip run is 15 miles, with 770 ft. change in elevation and several additional switchbacks. Numerous 4 per cent grades averaging 1,300 ft. in length on switchbacks are with the load, which means that upgrade operation with the empty train is an important factor in determining locomotive capacity and schedule speeds.

The average round trip from bench to crusher requires about one hour, to which must be added a one to one-and-one-half hour loading period on the bench. Under ideal scheduling of operation, nine round trips will move 7,000 to 8,000 tons of ore in 24 hours.

Train lengths are adapted to the length of tail tracks at the switchbacks. Normally, trains are made up of nine 45-ton dump cars, each of which will hold 90 to 100 tons of ore, making a trailing load of 405 tons upgrade, and 1,200-1,300 tons downgrade. Safe downgrade speeds with full load are limited by curves and track conditions to from 12 to 18 m.p.h. Return speeds with empties are from 15 to 25 m.p.h., depending on the grade.

Although it is practicable to operate electric locomotives from temporary trolley structures on the mining benches, to avoid delay and expense where such movement is difficult, each locomotive is equipped with a storage battery.

The 240-cell, 500-volt, lead-acid storage battery applied to each locomotive has a discharge capacity of 500 amp. hr. on a six-hour basis, approximately 70 per cent of the estimated output required for six complete bench cycles in average duty. The complete battery weighs approximately 14 tons.

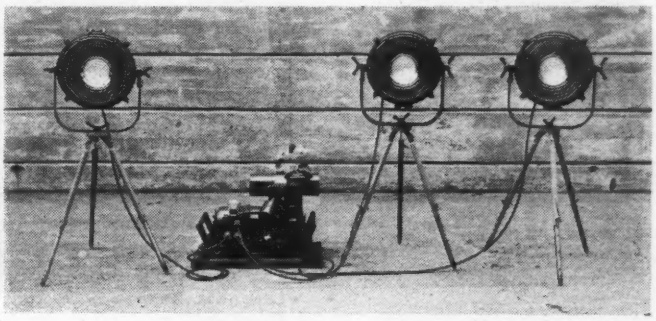
A large part of the battery output in each bench cycle is restored during the succeeding interval of time in which the locomotive is operating under the trolley to the crusher with loaded train, while dumping cars and when returning the empty train to a mine bench. Automatic charging equipment on the locomotive connects the battery to the trolley circuit through suitable resistors, providing at the start a high charging rate and later a reduced rate when the battery charge has been restored to a predetermined value. The expected life of the battery is five years.

The dynamic brake on each locomotive is capable of producing retarding efforts up to 50,000 lb. at train speeds between 8 m.p.h. and 18 m.p.h.

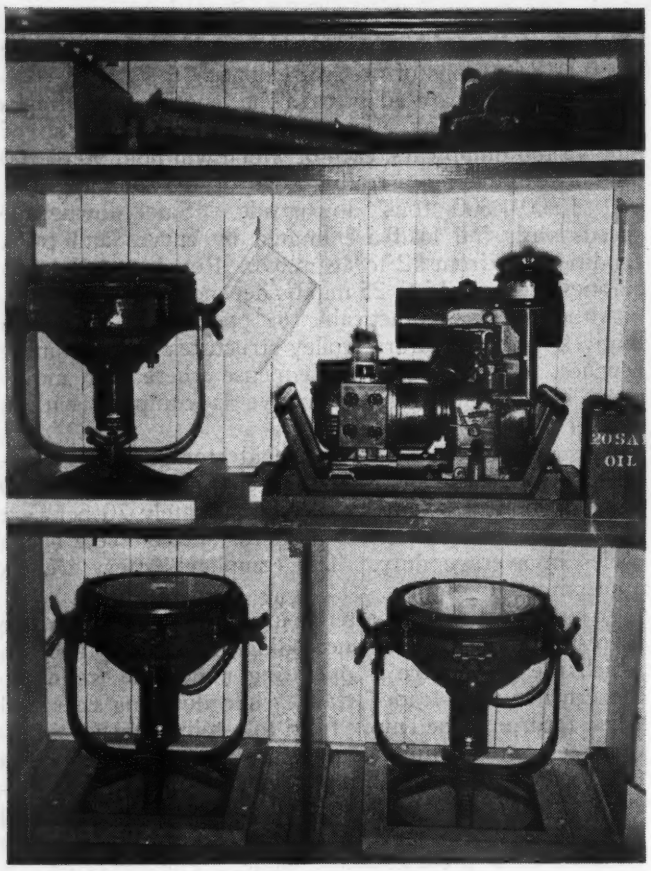
Reading Adds to Service-Train Equipment

RECENT additions to equipment which is carried on service trains of the Reading have proved of value at the scenes of derailments and are expected to be equally helpful if these trains are called into service in cases of floods, fires or other emergencies. One improvement consists of the installation of loud speaker facilities on the service-train derrick, the other is the provision of portable electric-lighting plants to furnish illumination when it is required.

The loud speaker of the voice-amplifying system is mounted on the crane boom and the relief train foreman is provided with a hand microphone attached to a



Portable Electric Lighting Units Consist of a Motor-Generator and Three Floodlights



When Not in Use Electric Floodlighting Units Are Stored in Cabinets in the Equipment Cars on Service Trains

long trailing cord which permits free movement about the scene of operations. The foreman is thereby enabled to view operations from the most advantageous point while maintaining communication with the crane operator. The latter is able to use the loud speaker through a microphone which is mounted in the crane

A Microphone Mounted in the Crane Cab Makes It Possible for the Operator to Speak to the Foreman or Other Workmen

A Hand-Held Microphone Attached to a Trailing Cord Enables the Foreman to Move About the Working Area—The Loudspeaker Is Attached to the Crane Boom

cab. All workers hear orders and conversations over the loud speaker and are thereby kept familiar with the progress of operations and can be warned immediately of any sudden danger. The value of the installation is attested by one foreman who stated, "We have used this equipment several times and I can safely say that it will improve the operation of the relief train very much. Through experience on derailments I have found there has been a certain amount of confusion and yelling in giving orders which in turn confuse the men working directly on the operation.

"With this apparatus, the clearing of tracks is put directly in the foreman's hands and he alone issues orders and instructions to his personnel on the ground and all concerned are familiar with what orders are being given and what is being done. It also brings the derrick engineer and the foreman in closer contact with each other and orders do not have to be passed along by stationing a man on the platform of the derrick. This practice ofen results in confusion of signals."

Portable Lighting Units

Needed lighting at the scene of service-train operations is provided by three floodlights operating on 120-volt current and having a total capacity of 1,250 watts. The lights are mounted on tripods and can be set to light an area of 1,250 sq. ft. Each floodlight has a 14-in. heat-resisting glass reflector with a circular divergence lens with focusing attachment. Current is supplied by an engine-generator unit in which the engine is a single-cylinder, air-cooled four-cycle type having a magneto ignition. It has a built-in tank with splash and pump lubrication. The generator windings are d. c. compound and a. c. self regulating and the generator is attached directly to the engine through a steel coupling shaft. The enging-generator unit is mounted in a cradle base which is fitted with carrying handles. Each floodlight is also equipped with a carrying handle. The engine-generator weighs 160 lb. and the floodlights weigh 57 lb. each. These light weights make it possible to carry the lighting unit in an automobile to any location where they are needed, although they are intended primarily for service-train work and are stored in special lockers in the equipment cars of these trains.

Engineers Seek Answers to War's Problems at Chicago Session

Large attendance, intensive program and special sessions on labor, materials and postwar problems feature annual meeting of the A.R.E.A., March 14-16

H. R. Clarke
President

F. R. Layng
President-Elect

W. S. Lacher
Secretary

SPURRED by a feeling of urgent need for the joint appraisal and study of their many war-time problems, and not unmindful of their postwar responsibilities, engineering and maintenance officers of the railways of the United States and Canada, held an intensive three-day meeting in Chicago on March 14-16, under the auspices of the American Railway Engineering Association. The meeting, which was considered particularly essential because of the cancellation of the annual meeting in 1943 and the still enlarging problems presented by peak traffic, record programs of essential work, the continuing inability to secure many needed materials, and critical shortages in manpower, was the forty-fourth annual meeting of the association and, as for a number of years in the past, was held in the Palmer House.

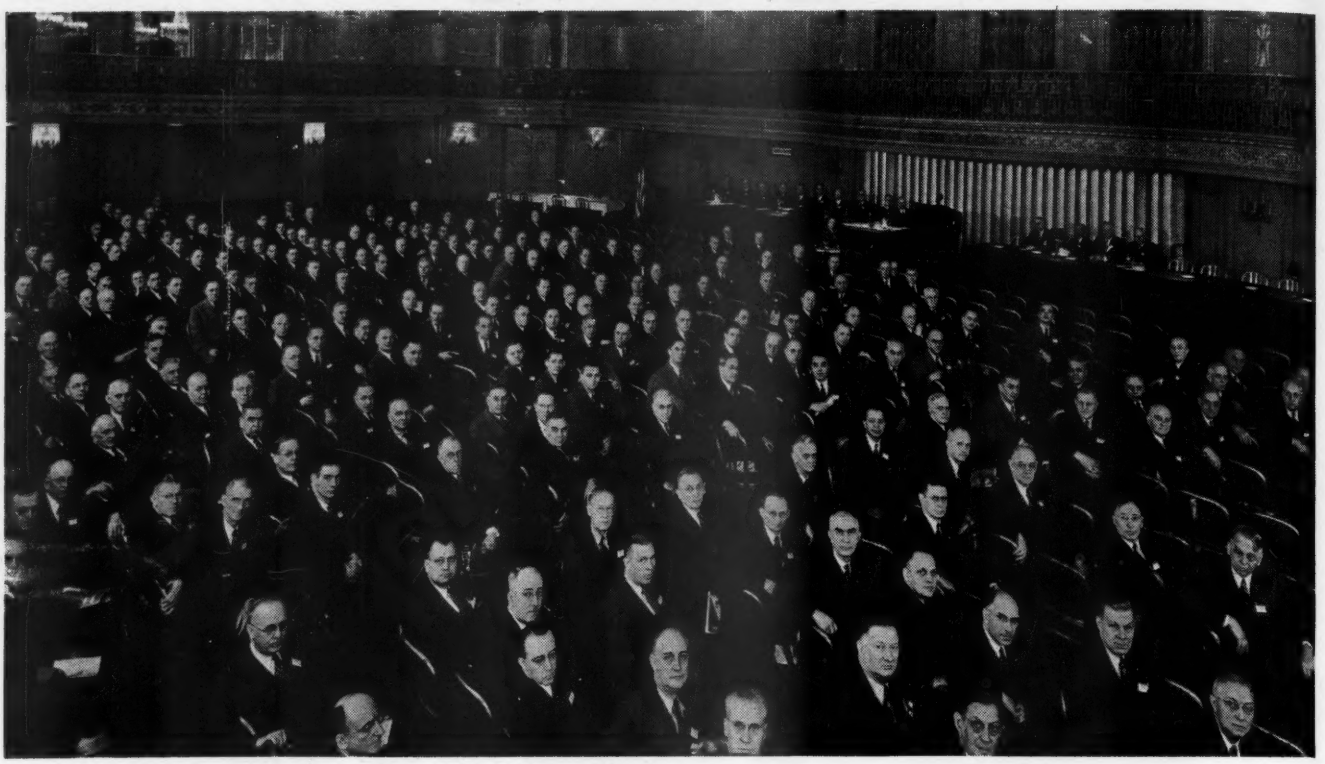
While the annual meetings of the association have always been characterized by studious attention to the work at hand, it is doubtful if any previous meeting was ever more intensive or keyed more closely to the immediate problems confronting its members. To this end, the normal procedure of previous years of giving primary consideration to the presentation of the reports of its standing and special committees, with a few interspersed addresses, was practically reversed this year in a program that was built primarily around addresses or groups of addresses on key subjects, rounded out by the presentation of the various committee reports in their most closely related order.

Features of the program in this regard included a session on Tuesday afternoon, embracing three addresses, which was given over to Labor, the present No. 1 problem of maintenance officers, with special consideration to ways and means of overcoming the prevailing shortage in manpower; a session on Wednesday afternoon, including five addresses, which was given over to the consideration of Materials, particularly as they affect track, bridge, building, and water service officers; and the session on Thursday morning, which was featured by an address by C. E. Smith, vice-president of the New York, New Haven & Hartford, on the Postwar Challenge to Engineering and Maintenance Officers.

Eastman Had Been on Program

Other special features of the meeting included the annual luncheon on Wednesday, with more than 750 persons in attendance, which was addressed by R. L. Groover, associate director, ways and structures, Office of Defense Transportation—representing Joseph B. Eastman, director, who had been forced to decline an earlier accepted invitation because of ill health, and who died on March 15, the day he was to have addressed the meeting, as noted elsewhere in this issue. Mr. Groover, who was formerly principal assistant engineer on the Atlantic Coast Line, emphasized the part being played by maintenance of way and construction forces of the railways, which, with the able assistance of the purchasing, mechanical and other departments, he said, alone have made it possible to maintain the railroad properties so that they could function with maximum efficiency.

Still another feature of the meeting, following a dinner tendered to members of the A.R.E.A. by the National Railway Appliances Association, was an address on Wednesday night by Lt. Col. Ralph E. Sherer, chief maintenance of way officer, Headquarters staff, European theater, Military Railway Service, who spoke at length on the outstanding part being played in the war zones.



The A. R. E. A. Annual Meeting in Session at the Palmer House, Chicago, on Tuesday

particularly the north African theater, by former railway engineering and operating officers in the various railway military battalions.

At the opening session on Tuesday, J. M. Symes, vice-president, Western region, Pennsylvania, speaking on The Tasks Before Us, emphasized the important part that railway engineers have played in providing the facilities that have enabled the railways to handle the largely increased war traffic, spoke of the large part that they must play in postwar reorientation of the railways to meet competition, and urged the enlistment of promising young men in railway service, to the end that there shall be no dearth of capable officers in future.

The session on Tuesday afternoon, which was given over to a discussion of Labor, was opened with an address by H. L. Carter, director, Bureau of Employment and Claims, Railroad Retirement Board, who heads up the government organization developed to co-operate with the railways in opening up resources of manpower. This address, which dealt with the Over-All Problem, was followed by addresses by T. A. Blair, assistant chief engineer, Atchison, Topeka & Santa Fe System, on The Employment of Mexican Nationals, and by W. G. Powrie, engineer maintenance of way, Chicago, Milwaukee, St. Paul & Pacific System, who discussed The Employment of High School Boys in Maintenance of Way and Structures Work.

The session on Wednesday afternoon, devoted to Materials, was opened by Alfred C. Mann, director, Transportation Equipment division, War Production Board, who discussed The Over-All Picture. This was followed by a symposium on measures to meet existing shortages, which included addresses by A. A. Miller, chief engineer maintenance of way and structures, Missouri Pacific, who gave specific consideration to track materials; by A. R. Wilson, engineer bridges and buildings, Pennsylvania, who viewed the problem from the standpoint of bridge materials; by A. L. Sparks, architect, Missouri-Kansas-Texas Lines, who discussed building materials; and by A. B. Pierce, engineer of water supply, Southern, who discussed water service materials.

Interspersed among the special features of the three-day program, as already indicated, 22 of the standing and special committees of the association presented reports on 113 of the subjects to which they had given special consideration during the year—these subjects relating to a wide range of problems confronting track, bridge, building, water service, signal and work equipment officers. To a degree larger than ever before, these reports reflected the changes that have taken place in recent years in materials, equipment and operating practices, and the specific problems raised by war conditions.

Owing to special considerations arising out of the war, no exhibition of materials and equipment was held in conjunction with the meeting by the National Railway Appliances Association, as in past years.

All of the general sessions of the meeting were presided over by President H. R. Clarke, chief engineer of the Burlington Lines, assisted by Vice-President F. R. Layng, chief engineer of the Bessemer & Lake Erie, and Walter S. Lacher, secretary. The secretary's report showed that the receipts of the association during the year exceeded disbursements by $4,926.97, and that the membership as of March 1, 1944, totaled 1,962.

The registration at the meeting was 612 members and 527 guests, a total of 1,139, compared with a registration of 600 members and 535 guests, a total of 1,135, at the last annual meeting of the association in 1942.

The New Officers

The following were elected officers of the association for the ensuing year: President, F. R. Layng, chief engineer, Bessemer & Lake Erie, Greenville, Pa.; vice-president to serve two years, J. B. Akers, assistant chief engineer, Southern, Washington, D. C.; directors, W. H. Penfield, chief engineer, Milwaukee Road, C. H. Mottier, chief engineer, Illinois Central, J. E. Teal, transportation

engineer, Chesapeake & Ohio; members of the Nominating committee, C. A. Knowles, assistant to vice-president, Chesapeake & Ohio, C. H. Blackman, chief engineer, Louisville & Nashville, G. M. O'Rourke, assistant engineer maintenance of way, Illinois Central, E. C. Vandenburgh, engineer of maintenance, Chicago & North Western, L. H. Laffoley, assistant engineer buildings, Canadian Pacific. In addition, A. A. Miller, chief engineer maintenance of way and structures, Missouri Pacific, St. Louis, Mo., and vice-president of the association, was advanced automatically to senior vice-president, succeeding Mr. Layng.

Following are abstracts of the addresses by President Clarke and Messrs. Symes, Groover and Sherer, together with abstracts of all of the committee reports and the discussion and action which followed their presentation. The addresses of Messrs. Carter, Blair, Powrie, Mann, Miller, Wilson, Sparks, Pierce, and Smith, commented on only briefly in following pages, will be presented in subsequent issues.

C. E. Smith Presents Challenge of Postwar

Speaking before the session on Thursday forenoon, C. E. Smith, vice-president of the New York, New Haven & Hartford, reviewed the economic and industrial situation following World War I, set forth the difficulties of the railways following the present war as he sees them, and then challenged railway engineering and maintenance officers to help surmount them. He had nothing but praise for the wartime performance of the railways under great handicaps and expects that, barring exceptional circumstances not now anticipated, they will complete successfully "the greatest transportation job in history."

Mr. Smith saw many problems ahead—presented by the loss of wartime traffic and revenue; by the resumption and intensification of competition by highway, air, waterway and the pipeline; and by the difficulties that will be encountered by the railways in securing for themselves, at the hands of the government, equality of treatment and opportunity with other forms of transportation. In the solution of all of these problems he placed a large share of responsibility upon those present in his audience.

Turning then to the more specific postwar problem and opportunities confronting engineering and maintenance officers, Mr. Smith challenged these officers to develop more efficient means of handling crossties from the time they are cut in the forest until they are installed in the track; to make the most effective use of highway motor trucks for the handling of materials and men; to increase their use of power machines in all classes of work, insisting upon new and improved devices that incorporate the latest developments growing out of the war; to seek the greatest advantages in such development as the continuous butt-welding of rail; to apply scientific research to their problems far beyond any programs undertaken to date; and to increase their effort to enlarge the authority of college-trained or other capable men.

In closing, Mr. Smith said: "There seems to be no doubt, following the war, the rails will have a broad field and spectacular opportunity for improvement in materials, devices and methods. What are we going to do about it? If we go on doing complacently the things that we did before we will not meet the challenge offered by intensified competition and by the many opportunities to improve our plant so that better, faster, safer, and more dependable service can be rendered at less cost and without loss. The challenge and opportunity are there. I am sure that they will be met."

Mr. Smith's address will be published at length in the *Railway Age* for April 8.

President Clarke's Address

When we last met two years ago, our country had actually been at war a little more than three months. We knew that difficult and dangerous days were ahead, but in many cases could only guess what the actual developments might be. In the two years just passed, the changes in our accustomed ways have been great.

As we became more familiar with the tasks ahead of us, as we learned what had to be done and how to do it, we found that some of the conditions we feared most did not develop, but that many of the things we had not expected were to come to pass. As new demands were made and new goals set, they were met, not easily or without effort, but, so far, fully and completely. This has been accomplished partly by the exercise of the best judgment and foresight granted us, but even more by performing each day the duties presented to the best of our ability.

In doing what has been done, many individuals and organizations have made records of which they can always be proud. However fine the performance of other industries has been, the railroads have equaled or surpassed them all. They have written a chapter in the record which will stand for many years to come. The industry which for years had been declared decadent by the uninformed, which had been the football of politics, hamstrung and handicapped in almost every way, has again demonstrated its vitality, resourcefulness, and worth. It is well for the nation and the world that this is so.

The splendid performance of the railroads so far has been made possible by the determination, effort, and co-operation of all concerned—management, labor, and governmental bodies; and full credit must be given also to the shippers and receivers of freight for the way in which they have complied with all suggestions and requests. We believe that in this united effort, and what it has accomplished, this association has had an important part. But the task, while well begun, is not finished. These are difficult and serious days, often perplexing and confusing, and we need all the help we can get. This meeting has been called and the program has been prepared solely to meet and answer that need.

Association Has Taken the Lead

The period during which I have had the honor of serving as your president has been a critical time in the life of our association. However, I believe that during this period both the usefulness and the prestige of the association have increased. Conditions growing out of the war—shortage of labor and material, and the unprecedented volume of traffic—created many new problems for the railroad industry. Many of these were referred to us and answers were demanded in much less time than is required normally under the established and time-tested procedure of our association.

Shortages of men, materials, and machines used in the construction and maintenance of our tracks and structures have become increasingly serious. We learned early the meaning of the term "critical" as applied to many of the items we need and use. Our committees were most active in efforts to reduce the amount of critical materials needed, or to find suitable substitutes that might be used without too great detriment and loss.

Shortages of materials and the urge for increased production resulted in this association being called upon to take the lead in another way. The American Railway Engineering Association has long been recognized as the authoritative source of information on railway engineering practices. The recommended practices and specifications appearing in our Manual have been adopted, in whole or in part, by the railways of North America, or have served as the basis of the standards of these roads. It was natural, therefore, that the War Production Board should select many of our specifications for mandatory application in its effort to expedite production through simplification.

However, the adoption of this expedient in some cases involved difficulties that were not at first apparent. Among these, it was recognized throughout that apparent simplification through arbitrary directives would result in hardship and loss, often entirely out of proportion to the assumed gain, and that much more effective results could be assured by enlisting the voluntary co-operation of the railroads in a program of simplification and standardization. Cases in point are the methods used in the deter-

mination of the allotment of new rail to the different railways, the plan for the allocation of released rail to the Army and Navy, and the study of and report on the possibilities of reducing the number of rail sections rolled. In these and many others, the standing and special committees of this association took a leading and constructive part.

Scientific Research Expanded

While we have good reason to be proud of the service that we have rendered in dealing with problems growing out of the war, it is also a great satisfaction that our committees have carried on with loyal enthusiasm when at times their work was done under difficult and discouraging conditions. Equally gratifying, and perhaps the accomplishment which gives me the greatest personal satisfaction, is the fact that the research investigations carried on in the interest of the work of our committees have continued unabated; in fact they have increased during this difficult and critical period. During the last two years, the program of research work has been expanded in accordance with the policy of more vigorous prosecution of scientific investigations adopted by the Association of American Railroads several years ago. The authorized expenditure for research in 1944 is $109,050, which is larger by almost $27,000 than the research allotment for any previous year. The credit for undertaking this work initially belongs largely to Ralph Budd.

The granting of larger appropriations for research work by the directors of the A. A. R. is evidence of their knowledge of the extent to which war traffic has intensified many problems arising in maintenance of way and structures work. The increased wear of rail during this period of much heavier traffic and of curtailed rail tonnage for replacement is being manifested daily by an increase in rail defects and failures, including several types of failures that had given little concern prior to the war. These must be studied and prevented, if possible.

The investigation of the effect of impact on bridges is steadily increasing the fund of knowledge which the bridge engineer has available when called upon to pass on the capacity of old structures to carry the increased loads imposed; and the technique and equipment employed in this investigation are being applied frequently in the study of individual, critical structures.

The urgent need of motive power and cars has been stressed frequently. We know that this is important, but those of us who are closely in touch with the problems of maintaining the track and structures, who know so well the critical situation in both manpower and materials, realize, as no one else can, how narrow the margin in the fixed properties sometimes is. We fear that the ability of the railroads to continue to meet the increasing demands of the future will depend more on the tracks and structures than on locomotives and cars. We know that we must use every means to make the most of what we have, and that we must do what we can, as the opportunity presents itself, to make our needs known.

I wish to refer briefly to the joint investigation of the relation between track and equipment being carried on by the research staffs of the two divisions of the A. A. R., Engineering and Mechanical, under the general supervision of a joint committee of the two divisions. The primary item on the program of this investigation is the study of locomotive counterbalance. Entirely aside from the technical elements of this program, or of the benefits which the railroads will derive from this study, I mention it since it illustrates so aptly the fine co-operation maintained in the study of a problem of vital mutual interest, carried on under the direction of engineers responsible to the General committees of the two divisions of the A. A. R., independently, yet in perfect harmony, as it must be, if the excellent results so far obtained are to be continued.

It would be unwise and unfortunate for us as individuals and as an association to give thought only to what has been accomplished. We must also look to the future. We cannot foresee the exact pattern of things to come. That has not yet been planned on the drafting board; the blue print has not been made. We know that there will be changes; probably means and methods that have answered in the past will not serve in the future. In view of this, and while no energy or effort must be diverted from winning the war, it is well for us to think ahead. The days and years to come will be challenging; they will call for the best that we have to give. This meeting, I am sure, will help us to meet that demand also.

Fine as is the record of the past, and proud as we are of it, we are here today not to recount what has been done or to glory in it, but to see more clearly the tasks that lie ahead and to learn how we can do them better—then to go back to our respective places and carry on with fresh enthusiasm and new courage.

J. M. Symes Views Engineering Tasks Ahead*

The railroads have been building up some remarkable operating records during the last few years. Generally, these records are thought of in terms of movable facilities, with perhaps too little emphasis on the permanent way and structures. To illustrate, I shall discuss briefly my personal operating experience during the last few years in the territory directly under my jurisdiction, which is generally that part of the Pennsylvania west of Columbus and Crestline, Ohio.

In 1939 our freight business, expressed in gross ton-miles, was 75 per cent of what it was in 1929. Our passenger business, expressed in passengers carried one mile, was 83 per cent of that in 1929. In 1939 we had plenty of facilities. There was no semblance of a major operating problem insofar as handling the business was concerned. In 1940, freight business increased 10 per cent over 1939 and passenger business 11 per cent, and still we had no operating problems. In 1941 freight business increased 30 per cent over 1940 and passenger business 28 per cent. We were then considerably ahead of the 1929 volume, with no sign of the traffic levelling off; in fact, it was increasing more rapidly than ever before.

Call on Engineers

It was time to begin some quick planning in order to be able to handle this increasing load, not only from the standpoint of equipment, but still more important, from the standpoint of way and structures. Our problem was twofold; First, to obtain the necessary additional facilities quickly in order to enable us to move the anticipated heavy volume of traffic, and second, to make these facilities fit in effectively with the fast and economical handling of a smaller volume of traffic after the war.

That then, in 1941, was when the engineering department really came into play. Our engineers were told not only what the operating department needed, but what it had to have in the way of additional facilities to "Keep 'em Rollin'". We knew that a complete change in traffic flow was occurring as a result of the war effort, with the concentration of more and more freight and passenger business on our main lines. Our immediate job, therefore, was to increase the capacity of our main lines between Crestline and Chicago, a distance of 300 miles, and between Columbus and St. Louis, Mo., a distance of 430 miles.

We began major improvement programs on these main lines a little more than two years ago. All told, on these two lines, we constructed 27 miles of second main track in three locations, reverse signalled four stretches of double track, provided four centralized traffic control installations, constructed or extended 34 passing sidings, provided power operation at 83 siding switches, built additional water facilities at eight locations, and installed additional and better communication facilities. Our program also included terminal improvements at Crestline, Chicago and Columbus, and at Fort Wayne and Indianapolis, Ind.†

During 1943 we handled 40 per cent more freight business than in 1929, and 325 per cent more passenger business. But these figures do not portray the entire picture, because our 1943 freight business between Crestline and Chicago exceeded that of 1929 by 57 per cent; between Indianapolis and St. Louis, it exceeded that of 1929 by 90 per cent; and between Columbus and Indianapolis, it exceeded that of 1929 by 100 per cent. Furthermore, in the first two months of the present year, traffic has already exceeded that of last year by 25 per cent and we are handling it with approximately 20 per cent greater efficiency than a year ago, and 36 per cent greater efficiency than in 1929—the relative efficiency being based on transportation productivity, or gross ton-miles per train hour.

* Vice-president, Western region, Pennsylvania, Chicago.

† A description of the major improvements carried out on the Pennsylvania between Columbus and St. Louis appeared in issues of the *Railway Age* for February 19 and 26.

I have referred to our improvement program only to show that it was the engineering department upon whom we had to call when we saw operating troubles looming ahead; that department built us out of our troubles, and it is that department that will have to build us up to enable us to meet our postwar competition successfully.

And now as to the postwar situation confronting the railroads, I am not a postwar prophet. I am afraid to be one, because I know that some of them are going to feel very foolish when they read their predictions several years hence.

However, regardless of what postwar conditions will be, we do know this—that the railroads will be required to furnish the fastest, most dependable, most economical, and safest transportation service in history. You men, as engineers, will be called upon to furnish many of the new facilities that alone will make it possible for the operating department to render this kind of service. If you do furnish these facilities, and the mechanical department furnishes the equipment, the operating department will furnish the kind of service that our traffic department will need to get the business. With proper co-ordination of the efforts of these four departments, accompanied by a sound national policy based upon equity for all forms of transportation, the successful future of the railroads will be assured.

Need Promising Young Men in Industry

Again looking to the future, one of the most important problems confronting the railroad industry is the induction into their ranks of promising young men—not necessarily college men, but those who really want to make railroading their life's work. This is more important in the engineering field than in any other branch of railroading, and the limit of the opportunities open to these men is controlled only by the men themselves. The job of protecting the future of the railroads with adequate engineering talent is, again, one that rests with you men. This is not only an immediate problem, but a long-range problem that requires attention now, so that the railroads will be protected in their trained manpower needs 20 years hence.

All that I have said this morning can be summed up in one sentence—That the future of the railroad industry depends to a large extent upon the engineering of the future, and that the engineering of the future depends entirely upon the kind of engineers we attract into the industry. That one sentence outlines the tremendous responsibility that rests on you. I have great confidence in railroad engineers, for I know that they appreciate fully their responsibility to sound postwar planning and to the welfare of their industry in the future.

The Problems— As Seen by O. D. T.

It is not necessary for me to go into detail regarding the burdens that engineering and maintenance officers have been carrying and continue to carry, as only the bearer of the cross knows its actual weight. However, it is only fitting for me, as a representative of the Office of Defense Transportation, to pay tribute to the American Railway Engineering Association, which for more than 40 years has been training its members in research and the methodical and practical application of the results thereof to the preservation of railway properties necessary for the efficient handling of rail traffic. Through many years of hard work, the committees of your association have striven conscientiously and diligently to better the domestic railway system by improving methods of maintenance and by developing improved machines and appliances. During the greatest of all emergencies, your efforts in the past in this direction are paying dividends beyond all expectations.

The Office of Defense Transportation is charged with the responsibility of seeing that rail traffic is kept moving expeditiously during this war period. We in the O. D. T. recognize the difficulties that have been overcome to date in meeting the conditions that have confronted us, including the almost unbelievably lean diet of materials and the decrease in the quantity of available manpower, coupled with an alarming decline in the efficiency of labor. It is only through tireless energy, unrelenting supervision, and careful planning, that our rail systems are able to carry the heaviest burden in the nation's history.

Being an engineer by training and experience, it is only natural that I should place more than passing emphasis on the part being played by the maintenance of way and construction organizations, which, with the able assistance of the purchasing, mechanical, and other departments, have made it possible to maintain the railroad properties so that they could function with the maximum efficiency. The engineers have long been instrumental in preventing the unwitting destruction of railroad property. By close supervision and, at times, inborn intuition, they prevent many accidents and consequent destruction of life and property by controlling speeds when unstable track conditions develop; by preventing the operation of power and equipment in excess of the carrying capacity of the track structure; and by preventing numerous other questionable operating practices.

Railroad men have been trained in the hard school of experience to meet emergencies. Therefore, when a national emergency arose, the railroad organizations were able to meet it without complaint and with the determination to see it through, even though it involved considerably more ingenuity and planning than repairing a single washout or clearing a wreck.

It is of interest to note that in 1943 there were cleared through the O. D. T., as being essential to the war effort, and approved by other governmental agencies, some 3,629 railroad construction projects with a total estimated cost of $134,968,171. This is no small sum of money even in these days. These projects may be classified as follows:

Signalling and centralized traffic control	$24,259,835
Bridges, trestles and culverts	16,298,255
Main tracks	19,990,209
Yard, passing and other tracks	37,891,628
echanical facilities, including water supply	19,480,187
Freight and passenger facilities	4,581,346
Communication facilities	1,046,848
Miscellaneous	11,419,833

Our preliminary forecast for 1944 indicates that construction undertakings necessary to preserve the integrity of our domestic rail systems will be as great or greater than in 1943.

Now that the difficulties confronting the railroads have been fully recognized in all quarters, it is only natural that railroad men should like to know what is going to be done about them, and what may be expected in the future. Those railroad employees who are charged with the responsibility of maintaining the tracks, structures, and equipment, are inherently workers and will work, as the records show, if given something with which to accomplish the task before them. We are bending our efforts in this direction. The records will show that these efforts have been attended with success in some quarters, but in others I am sorry to say that the results have not been so favorable.

We are confronted at the present time with extraordinary demands by the armed forces. Even though the railroads are recognized as a "second front," I am sure that none of us would demand material if the use of this material by the armed forces would shorten the war by as much as one day or even one hour. Therefore, scrutinize your requests for materials and machines carefully to see if you can forego them for 90 days or even 30 days. The picture may change abruptly at any time.

We see and hear about manpower shortages. It is a foregone conclusion that when the supply of labor decreases, supervision must increase in order to maintain an efficient organization. I am afraid, therefore, that it will be necessary, for the immediate future at least, that railroad supervisory officers take another hitch in their bolts and carry on. This means, of course, that considerable time must be spent in patrolling the property and keeping in close touch with the "soft spots."

To some extent, the antidote for a deficiency of manpower is a greater use of machines, to which thought we all subscribe. However, we must remember that this war is being waged with machines; the same machines, or component parts thereof, that are used in mowing the right of way, cleaning ballast, tamping ties, building roadbed, etc. The O. D. T., as claimant agency for the railroads, is continually pressing the railroads' claims for machines, "snitching" a few here and there, and laying the

* Associate director, ways and structures, O. D. T.

groundwork to secure larger quantities as soon as conditions will permit. Those agencies in Washington that are in control of the scheduling of such equipment are fully conscious of the urgent need for maintaining the rail transportation systems of the country. I have no doubt that such knowledge of these conditions will soon bear dividends. On this score, I do not want to appear too pessimistic; neither do I want to appear overly optimistic, as I know what it is to be disappointed.

During the nine or more months I have been with the Office of Defense Transportation as associate director, way and structures, I have experienced many disappointments of this nature. I have learned not to become too optimistic, because there are so many unpredictable factors affecting the various production lines that enter into the picture, and these frequently cause our plans to be disrupted.

I would like to call attention to the hard work and diligent effort that are being devoted to solving your materials and equipment problems by the Transportation and Equipment division of the WPB, Steel division, as well as by many other agencies. They are all making these problems their own, and there is no doubt in my mind as to their successful solution and the final outcome.

Symposium on Labor

With labor the No. 1 problem of the maintenance of way and structures forces, the entire session on Tuesday afternoon was given over to the consideration of this problem and related matters. The session was opened by an address prepared by H. L. Carter, director, Bureau of Employment and Claims, Railroad Retirement Board, which, in the absence of Mr. Carter on an unexpected trip to Mexico, was presented by Donald M. Smith, assistant director of the Bureau of Employment and Claims. Following the presentation of Mr. Carter's address, T. A. Blair, assistant chief engineer, Atchison, Topeka and Santa Fe, System, spoke on the employment of Mexican Nationals, and W. G. Powrie, engineer maintenance of way, Chicago, Milwaukee, St. Paul and Pacific, system, spoke on the employment of boys in maintenance of way and structures work.

In a comprehensive treatise, Mr. Carter first outlined the functions and responsibilities of the Railroad Retirement Board and its aim to co-operate with all interested parties, and then discussed, in order, the importance of stabilization of employment in the railway industry; the effect of Selective Service and of the transfer of employees to other industries on railroad employment; and the various factors involved in holding employees, including proper housing, food, recreational facilities and free transportation to and from work locations. Turning then to the recruiting of employees, Mr. Carter discussed War Manpower control, migration control, the Industry Stabilization plan, and a wide range of recruiting possibilities. Standing out in his address was a plea for the designation of full-time officers on the railways to deal specifically with labor problems, it being pointed out that centralized control and supervision of personnel for an entire system make for uniform hiring practices, for efficiency and immediate transfer of men between divisions, and for better over-all planning of the manpower problem.

Mr. Blair's address dealt largely with the experience of the Santa Fe in the employment of Mexican Nationals, and presented in some detail the specific problems presented by language, food, housing, wages and other working conditions. He continued with a discussion of the endeavors of the joint Mexican American Commission now meeting in Washington to work out clear-cut definitions under which Mexican Nationals can work on the American railways, and closed with a summary of the restrictions that now appear as likely to be placed upon their employment.

Mr. Powrie's address on the employment of high school boys in track and bridge work dealt largely with the experience of the Milwaukee, on which, he said, more than 1,300 were employed during the last summer in section gangs, extra gangs and bridge and building gangs. He held the employment of these boys as no complete solution of the labor problem confronting the maintenance of way and structures forces of the railways, but pointed out that, with proper supervision, and with proper housing, food and safety instruction, the boys work diligently, effectively and safely.

In evidence of this, Mr. Powrie pointed out that the boy gangs on the Milwaukee last year completed about 110 track miles of reballasting and surfacing work, and, with the help of about 20 experienced trackmen, constructed a 9-mile section of new second main track. Arrangements, he said, are already under way to employ an equally large number of boys on his road during the coming summer.

Extended abstracts of the addresses by Messrs. Carter, Blair and Powrie will appear in the issue of the *Railway Age* for April 1.

Session on Materials

At the session on Wednesday afternoon, which was given over entirely to the consideration of materials and related matters, A. C. Mann, director, Transportation Equipment Division, War Production Board, Washington, D. C., spoke on the Over-All Picture, opening a symposium which was subsequently participated in by A. A. Miller, chief engineer, maintenance of way and structures, Missouri Pacific; A. R. Wilson, engineer of bridges and buildings, Eastern region, Pennsylvania; A. L. Sparks, architect, Missouri-Kansas-Texas Lines; and A. B. Pierce, engineer of water supply, Southern.

In his address, Mr. Mann went straight to the subject uppermost in the minds of those in his audience and discussed the immediate prospects for the major items of materials and equipment needed by the maintenance of way and structures forces, and the general policy of the Office of Defense Transportation with regard to aiding in the fulfillment of these needs.

Speaking of the rail situation, Mr. Mann saw a trend toward the release of considerably more rail to the railways in 1944 than in either 1942 or 1943. He pointed out that the ODT had asked for a total of 2,200,000 tons in 1944, and that while the total tonnage allotted by the WPB was only 1,825,00 tons, it appears now that the railways can have hope of securing 2,165,000 tons during the year, or substantially the amount requested by the ODT.

Turning to a discussion of the general steel situation, Mr. Mann saw some relief in sight for many classes of steel products, especially after the middle of the year, and pointed out that there is no longer any necessity for substituting carbon steel for alloy steel in places where alloy steel will provide superior service. As to ties and lumber, Mr. Mann was not so encouraging, pointing out that there is every evidence that the situation as regarding ties in 1944 will remain tight, and that unless the lumber industry can meet the large lumber requirements in prospect for 1944, it may be necessary to tighten further the existing controls on lumber distribution and use.

Owing to the manpower shortage that has developed, Mr. Mann said that an unusually heavy burden has been thrust upon work equipment builders for power machines and tools, with the result that the situation here in spots is not too bright for the railways. It is estimated, he said, that the requests for mechanical track devices alone this year have increased at least 200 per cent over the requests for similar devices a year ago.

Track and Bridge Materials

In discussing track materials from the users standpoint, Mr. Miller made a plea for further sacrificing co-operation on the part of maintenance men in extending the life of existing materials to the limit, in reclaiming materials where safely possible, in exercising the greatest care in making material applications, and in avoiding the purchase of new materials beyond what he termed "patriotic, unselfish sufficiency and safety." Later in his address, he called for more efficient supervision, closer inspections, and changes in a number of "normal-times" methods of rail and tie renewals—all in the interest of securing the maximum life from existing materials, with a minimum expenditure of manpower. Going still further, Mr. Miller recommended a wide range of material and tool reclamation, a practice which he recognized as uneconomical in many cases, but which he insisted must be adopted today in the interest of the war effort. The question to be answered today, he said, is "will it work, rather than does it work?"

Speaking from the standpoint of the bridge engineer, Mr.

Wilson urged open mindedness on the part of his associates in construction and maintenance practices in the interest of conserving materials; cited a number of examples of the effective alteration, strengthening and reuse of available unused bridge spans; and spoke of the value of welding, under certain conditions, in the repair and adapting of existing structures to present-day traffic and heavier loadings, while saving both materials and labor. In closing his remarks, Mr. Wilson urged close study of the "wealth of information tucked away in the publications of the A. R. E. A.," which he said indicate to bridge engineers not only many practical ways of doing jobs most economically, but also measures to be taken in meeting the existing shortage of materials.

Building and Water Service Materials

Viewing the material situation from the standpoint of the architect or building engineer, A. L. Sparks saw the most critical situation ahead with respect to lumber. After citing conditions in the lumber industry, the prospective large continued demands of our military forces, and current restricting orders of the WPB, he pointed out that one of the most important things for building men to do at this time is to conserve their second-hand lumber supplies. In this regard, he went so far as to suggest that before the present emergency ends, it may be necessary for the railroads to tear down some of their frame buildings, replacing them with brick or concrete, in order to secure lumber with which to construct other indispensable facilities.

Turning to other scarce materials, Mr. Sparks urged the combing of the railroad properties for every usable piece of brass and other metal, suggesting the advisability of making a careful survey of their buildings and other structures with the view of locating and cataloging for further use every class of building material that is not essential in its present use. He saw some hope in the otherwise relatively dark building picture in the ready availability of concrete, brick, tile, marble, plaster, composition roofing, glass, sewer pipe, paint and some classes of steel, and also in the increased availability of skilled building mechanics, especially among the older men released from war plant construction, and urged the full use of these materials and of available manpower in maintaining existing structures and in protecting them against decay, deterioration and fire.

Closing the symposium on materials, Mr. Pierce painted the picture from the standpoint of water service engineers. In his address, he told of the largely increased demands for water created by today's record volume of traffic; of the restrictions that have been placed on pumping equipment, on chemicals, and on materials for the construction of water tanks and delivery facilities; and then pointed out many of the expedients that have been employed on his and other roads in an attempt to meet this situation. He expressed the fear among water service men that some of the restrictions being placed on chemicals, especially chestnut tannins, may affect adversely safe and dependable locomotive operation, and said that further curtailment in the availability of tannin to the railways will result in the formation of scale in cold water lines, injectors, boiler checks, feedwater pumps and heaters, and in locomotive boilers.

More detailed abstracts of the addresses by Messrs. Mann, Miller, Wilson, Sparks and Pierce will be presented in the *Railway Age* for March 25.

Railway Men in Combat Zones

At the evening session on Wednesday, Lt. Col. Ralph E. Sherer, chief maintenance of way officer, Headquarters staff, European theater, Military Railway Service, spoke on The Contribution of Railway Men to the War Effort in the Combat zones. Col. Sherer first described briefly the organization of the Military Railway Service, after which he recounted in some detail the engineering activities of the MRS, and its counterpart in the British army, in the North African theater, especially during the campaign in Tunisia. Although the actual rehabilitation of rail lines, including the construction of new trackage, the reconstruction of bridges, and the clearing of anti-personnel mines, is ordinarily the function of the Corps of Engineers, Col. Sherer explained that it was discovered early in the North African campaign that frequently the Engineers were too busy with combat units to assist in getting the rail lines back in operation.

One of the problems encountered in conducting railway operations in North Africa, according to Col. Sherer, was raised by certain differences between the organization of the British Military Railway Service troops and that of the Military Railway Service of the United States Army, but this problem was solved by issuing an administrative memorandum providing a directive that made possible a unified command. Also, to co-ordinate the advanced allied interests and to make possible immediate action on railway engineering problems arising from day to day as the campaign developed, an advanced headquarters of the Director General, Military Railway Service, was established to handle the planning for reconstruction and general liason between all the various units involved. Discussing depot construction, Col. Sherer described how this type of work was divided between British and American troops, and said that during the campaign approximately 32 such projects were constructed by American Engineer troops, embracing about 19 miles of tracks and 84 turnouts, while Military Railway Service troops built about 61 projects consisting of 47 miles of track and 198 turnouts.

Because of the sudden final collapse of the enemy troops in North Tunisia, giving them little time in which to execute demolition plans, the requirements for construction and rehabilitation of the railways recovered from the enemy in combat zones was much less than was anticipated. For the most part the greatest damage was done by our bombing forces prior to the retirement of the enemy. Damaged bridges required the heaviest reconstruction work, there being upwards of 65 bridge structures damaged or destroyed in the entire Tunisian campaign. As soon as all lines needed for traffic in Tunisia had been opened for operation, it was necessary to undertake essential permanent repairs to replace the many temporary arrangements that had been made to hasten the opening of the lines, and the manner in which this work was organized was described by Col. Sherer. A number of individual bridge reconstruction projects were described in detail.

The latter part of Col. Sherer's paper was devoted to a discussion of the difficulties encountered in rehabilitating railway lines due to the extensive use by the enemy of anti-personnel mines. Such mines were found to be sown thickly around every major structure that had been demolished, and in many territories they were encountered in large numbers along the shoulders of railway embankments. Because the Engineer mine clearance troops were frequently busy clearing areas for the combat troops, Col. Sherer said that it was necessary at times to do a certain amount of mine clearance work with the railway troops. He cited a number of instances in which these troops rendered such service, together with the methods used.

An extended abstract of Col. Sherer's address will appear in an early issue of the *Railway Age*.

Co-Operative Relations With Universities

Elmer T. Howson, Chairman*

The report of this committee was prefaced by a foreward in which the committee first pointed out how wartime conditions, especially those affecting higher educational institutions, have made it necessary for the committee to postpone study of those of its assignments that deal with university programs and procedure. The committee also referred to the preparations the railroads are making for the postwar period, and declared that an essential phase of this activity must be the recruiting into railway service of young men of superior ability and education for training in the practical rudiments of railroad operation in order that, when the need arises, men of requisite leadership qualifications may be available to carry on the responsibilities that the older men must lay aside.

Discussing its work, the committee said that "it is a continuing

* Vice-President and Western Editor, *Railway Age*

task of education, looking to the ultimate universal realization by railway and college authorities alike that the railway industry requires the most capable leadership available and is prepared to compete with other industries for its full share of the most promising young men who leave our institutions of learning.

Greater Appreciation Among Railway and University Officers

One of the assignments of this committee is to stimulate greater appreciation among railway and university officers of (a) the fundamental importance of instruction in transportation and economics, and (2) the necessity for presenting courses of instruction based on current railway conditions and taught by men of adequate ability and experience. In a progress report on this assignment, the committee explained that, because the interest and activity of university officers are now directed so largely in military channels, it had confined its investigation during the past year to railway officers. In this work, the committee sent a letter to a number of representative railway executives raising the question as to the attention that is being given, or it is believed should be given, to the careful selection of young men from colleges and universities in order that the railroads may be better prepared to meet the intensive competition to which they will be subjected after the war.

The bulk of the committee's report was made up of excerpts from replies received to this letter. Summarizing these replies, the committee said that they indicate "that there is already a great appreciation among railway officers of the fundamental importance of instruction in transportation and economics and of the necessity of presenting proper courses of instruction." Referring to the problem that will be raised when the young men who have been given accelerated training in engineering as part of the military program return to civil life and seek employment in engineering fields, the committee expressed the opinion that railway employing officers should give considerable thought to this problem with a view possibly to working out some plan with the colleges and universities whereby part-time employment might be given while the young men were completing their engineering education.

Acquainting Universities and Colleges with A. R. E. A.

In carrying out its assignment to call to the attention of universities and colleges such information and conclusions developed by the association as are thought to be of special interest or value to them, the committee stated that during the past year it had continued work on its assignment, directing its activities particularly to stimulating interest among college faculty members and students in the post-war possibilities for the railways and post-war opportunities for service in the industry.

Value of a Technical Education

An assignment of this committee is to develop means of bringing to the attention of railway managements the value of a technical education as a qualifying factor for young men desiring to enter railway service with a view to advancement. In its fourth progress report on this subject, the committee said that, before reviewing a few of the plans for recruiting college-trained men which are now in effect on certain railways, it seemed appropriate that some of the earlier plans, since discontinued, should be studied. Accordingly, the committee described such plans that had been in effect at one time on the Illinois Central, the Southern Pacific and the Delaware & Hudson.

Greater Interest in Science of Transportation

In a progress report on its assignment to stimulate a greater interest in the science of transportation among universities and college students, the committee discussed various phases of this subject, including reference to the decreasing time allotted to railroad engineering subjects in most engineering schools; the various factors determining the success to be achieved in interesting students in transportation engineering subjects; the possibility of stimulating interest in the science of transportation among engineering students by changing engineering curricula to offer more work in transportation engineering; the importance of having teachers with practical experience in the field; contacts between students and men in the field as a means of stimulating interest; the desirability of scheduling speakers in transportation before student gatherings; and the possibility of using contact men between the railroads and schools as a means of developing better co-operative relations.

Use of University Facilities for Research Work

A brief progress report, submitted as information, was presented by this committee on its assignment to develop means whereby facilities of the universities may be made more directly available for research work of the association and the railway industry. The substance of this report was that, in view of the unusual conditions now prevailing, the committee made no attempt during the past year to collect detailed information as to the facilities available for railway research in the universities throughout the country.

Report of Committee on Rail

W. H. Penfield, Chairman*

Progress reports were presented by this committee on 10 of its 13 assignments. Appended to the report was the Tenth Progress Report of the Joint Investigation of Fissures in Railroad Rails, which is being conducted by the Engineering Experiment Station of the University of Illinois, in cooperation with the Association of American Railroads, through the Committee on Rail of the A. R. E. A., and the manufacturers, through the Rail Manufacturers' Technical Committee.

Revision of Manual

A number of recommendations were made by the committee regarding the forms and instructions in the Manual for reporting rail failures. Specifically, it recommended approval of a proposed revision of rail failure report form 402-C, approval of a revision of instruction form 402-C(a), and the adoption for printing in the Manual of letter-form 402-L, the latter being for use in furnishing annual data on progressive-type failures.

These revisions were approved.

Specifications for Thermal Treatment of Rails

Under its assignment to prepare specifications for the thermal treatment of rail, the committee said that the proposed recommended practice for the control cooling of railroad rails which had been adopted by the Contact Committee of the Rails Investigation, and approved by the Committee on Rail, and published in the A. R. E. A. proceedings for 1942, had since been amended by both committees to permit the acceptance of light rails, providing the temperature did not fall below 300 deg. F. in five hours. As amended, the recommended specifications were included in the report.

Rail Failure Statistics

In accordance with customary practice, the report included several compilations of rail failure statistics, prepared by W. C. Barnes, engineer of tests of the committee. These included a report on general rail failures, one on transverse fissure failures, and a third on control cooled and Brunorized rail. These compilations were in substantially the same form as in previous years, the purpose being to bring up to date the statistics on rail failures.

Cause and Prevention of Rail Battering

Reporting on its assignment to investigate the cause and prevention of rail battering and methods of reconditioning rail ends, the committee stated that, with the aid of the Rails Investigation test party at the University of Illinois, it has under observation a test installation of heat-treated rail ends on the Chesapeake & Ohio, near Carey, Ohio. It noted that a report on the field measurements made on these joints during 1943 comprises a part of the Tenth Progress Report of the Joint Investigation of Fissures in Railroad Rails, which was appended to the committee's report. The committee noted, further, that there had been no new developments in the test that is in progress on the Richmond, Fredericksburg & Potomac, to determine the results obtained from various methods of building up battered rail ends.

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Continuous Welding of Rail

In a progress report on its assignment relative to the continuous welding of rail, the committee presented a tabulation of additional service failures in twelve of the installations of continuous welded rail that are listed in the proceedings for 1941. The report also included a tabulation giving a revised summary to date of the various installations of continuous welded rail.

Service Tests of Various Types of Joint Bars

Under its assignment to make service tests of various types of joint bars, the committee presented a comprehensive progress report, complete with tables and charts, covering the service performance to date of the different types of joint bars that it has under observation on the Atchison, Topeka & Santa Fe and the Pennsylvania. Appended to the report this year was a set of conclusions covering various aspects of the test, which the committee considered to be justified by the results to date.

Investigation of Joint Bar Failures

A report of the committee on its assignment to investigate joint bar failures and to give consideration to the revision of design and specifications, consisted of a progress report of the rolling-load tests of joint bars that are being conducted at the University of Illinois, which was submitted as information. The report was in the form of a monograph by N. J. Alleman, special research associate professor of engineering materials, University of Illinois.

Fractures Under Engine Burns in Rail

A brief progress report, submitted as information, was presented by the committee on its assignment to study the development and characteristics of fractures under engine burns in rail. After a brief discussion of the progress that has been made to date in conducting laboratory tests, the committee renewed its request for information from members as to methods of repairing engine-burned rails as well as the efficiency of such repairs. The committee is also anxious to obtain statistics showing the prevalence of rails removed from service because of engine-burn fractures, and members of the association were requested to keep such a record and to make the results available to the committee.

Causes of Shelly Spots and Head Checks

With reference to its assignment to investigate the causes of shelly spots and head checks in rail surfaces for the purpose of developing measures for their prevention, the committee submitted a progress report, offered as information, in which it presented a tabulation showing how the assignment has been divided into three groups. Next, it was noted by the committee that shelling is a much more serious and widespread condition than was first realized and that, while a shelly condition may be visible in some cases, in many others fractures of the rails may occur without the defect becoming noticeably visible on the surface of the head. Therefore, it said, it is doubly important that a solution be found. Although the investigation of this problem has not advanced sufficiently to warrant any definite conclusions at this time, the committee offered a series of comments relative to the progress that has been made to date with respect to various aspects of the study.

Appended to the report on this assignment was a statement (Appendix A) covering the progress that has been made to date on that portion of the work which has been carried out by the research staff of the Engineering division. This report discussed the studies of rail contours and coal-car wheel contours that have been made to date. Also appended to the report was a discussion (Appendix B) of the laboratory studies of the cause and prevention of rail shelling that are now in progress at the University of Illinois as part of the general investigation of shelly spots and head checks. This part of the report was in the form of a monograph prepared by R. E. Cramer, special research associate professor of engineering materials of the University of Illinois.

Recent Developments Affecting Rail Sections

A progress report, offered as information, was submitted by this committee on its assignment to investigate recent developments affecting rail sections. Explaining the assignment, the committee said that it is concerned primarily with an investigation of stresses in the webs of 112-lb. RE rails, although it has been expanded to include the 131-lb. RE section, and that it is fully realized that other features of the rail design may need consideration. After reviewing briefly the investigation work that was carried out on the Denver & Rio Grande Western, the committee submitted an outline of the proposed investigation, which consisted of three main phases. Various aspects of the three phases were then discussed separately in some detail.

Tenth Progress Report on Rail Investigation

Appended to the report of the committee on Rail was the Tenth Progress Report of the Joint Investigation of Fissures in Railroad Rails that is being conducted by the engineering experiment station of the University of Illinois, in co-operation with the Committee on Rail and the Rail Manufacturers' Technical Committee under the general direction of H. F. Moore, research professor of engineering materials. Excluding the brief introduction, the report consisted of three parts, prepared by members of the test party, each dealing with a different phase of the investigation. One of these gave the results of field measurements for batter that were made in April, 1943, on the end-hardened rails in the test track on the Chesapeake & Ohio, at Carey, Ohio; another gave the results of an examination for weeping cracks in these same rails; and the third consisted of a study of control-cooled and Brunorized rails that had failed in service.

Report on Buildings

A. B. Stone, Chairman*

Reports were presented by this committee on six of its eight assignments, including two progress reports with recommendations, one progress report submitted as information, and three final reports, also offered as information.

Revision of Manual

Under Revision of Manual, the committee made two recommendations covering material in the specifications for railway buildings. One of these called for deletion of two sentences in the section on Pile Foundations and their replacement with new material. The sentences recommended for deletion read: "Timber piles shall be furnished in accordance with the American Railway Engineering Association specifications covering piles for trestles, except that where piles are to be untreated they shall not be peeled. Piles that will be cut off below permanent moisture will not be treated."

The new material reads as follows: "Timber piles shall be of the species designated by the engineer or shown on the drawings, and shall conform with A. R. E. A. specifications for Wood Piles. Piles that are to be cut off below permanent moisture shall be second class piles, and need not be peeled. Piles that shall extend above the line of permanent moisture shall be first class piles and shall be peeled and treated with No. 1 creosote oil, full-cell process, in accordance with A. R. E. A. Specifications for the Preservative Treatment of Wood."

The committee's other recommendation called for deletion of the paragraph on Asphalt Cement Binder in the section on Asphalt Macadam Pavements reading: "The asphalt cement shall meet the current requirements of the A. S. T. M. for asphalt cement, Specification D-103," and its replacement with the following sentence, "The asphalt cement shall be of the grade and quality designated by the Engineer in the Special Provisions of the Contract."

These revisions were approved.

Specifications for Railway Buildings

Reporting on its assignment to prepare specifications for railway buildings, the committee called attention to the fact that in 1942 it submitted, as information, a set of specifications for welded structural steel and that in 1943 these specifications were presented for adoption and inclusion in the Manual, being given 355 votes of approval and 14 votes of disapproval in a letter ballot that was conducted on this recommendation. However, it explained that, because of written criticisms received with some of the ballots, the

* Assistant Chief Engineer, Norfolk & Western.

committee recommended that the specifications be withheld from the Manual pending careful study of the comments made. Following approval of this recommendation by the Board of Direction, the committee reviewed the specifications and made certain revisions. As revised, these specifications were presented again this year with the recommendation that they be adopted for publication in the Manual.

Facilities and Equipment for Spray Painting of Rolling Stock

A detailed progress report, presented as information, was submitted by the committee on its assignment to investigate the design of facilities and equipment for the spray painting of rolling stock. The committee first discussed briefly the advantages of the spray method of applying paint, after which it dealt in some detail with the fire hazards involved when this method of application is used. Because of these hazards, it said, various national authorities have developed and adopted regulations and safeguards for minimizing them. It is of the utmost importance, said the committee, and is recommended by fire protection authorities, that specially designed facilities and equipment be provided to minimize the accumulation of vapors and residues where paint is being applied by spray machines inside enclosures.

After a brief discussion of the causes of fires where spray painting is being done within the buildings, the committee listed various precautions that should be observed to prevent such fires. The committee then discussed the need for proper ventilation in connection with interior spray painting; the precautions to be observed in the construction of the spray painting building and in the handling and storage of the painting materials; and the primary equipment required for spray painting.

The spray painting of freight equipment, said the committee, is generally done on assigned tracks outside of buildings with portable spray-painting equipment, or in an arrangement whereby the paint containers are located in a building and the paint is piped to the point of use. For passenger equipment, it is important, it said, to have the finishing done indoors, which necessitates a building properly provided with the various safety facilities. The remainder of the report was concerned primarily with interior spray painting, considering such subjects as the capacity of the plant to be built, the use of the canopy exhaust system, the method and operation of the canopy when painting passenger cars, and the illumination and heating of the building.

These specifications were adopted.

Direct Locomotive Coaling Devices

A final report, presented as information, was submitted by the committee in connection with its assignment relative to direct locomotive coaling devices. The committee first pointed out that, to meet the demand for efficient and economical means of coaling locomotives at small terminals and yards where storage-type coaling facilities are not available, several direct-to-engine coaling devices have been developed. These may be generally described, it said, as being of three classes, namely, (1) the skip bucket; (2) the continuous chain and bucket elevator; and (3) the flight or drag type. The report described the construction, operating features, coal handling capacity and other pertinent aspects of these various types and also was illustrated with drawings of the different types.

Sanding Facilities for Diesel Locomotives

In its assignment to investigate sanding facilities for Diesel locomotives, the committee presented a final report, submitted as information. Pointing out that the sanding facilities required for servicing Diesel locomotives are essentially the same as those employed in sanding steam engines, the committee then took note of several differences to be observed in designing sanding facilities for Diesel locomotives. Other matters considered in the report included the number and location of the sand inlets on Diesel locomotives; the desirability of locating the valve in the sand supply line as close to the discharge end as practical to minimize spillage; the recommending of three inches as the proper size of the delivery pipe line; the various desirable features of the pipe lead or spout; the use of ropes for operating the sand valve so that it may be opened and closed from the discharge end of the pipe; the desirability of equipping the elevated dry sand storage tank with a ladder extending from the ground to the top; the use of a small platform built beside the track to afford a safe and convenient means of reaching the inlets on locomotives with high sand tank openings; and the fact that sanding equipment for servicing Diesel locomotives is designed and sold by contractors who build coal, sand and cinder plants.

Fire-Resistant Wood for Railway Buildings

One of this committee's assignments is to collaborate with the Committees on Water Service, Fire Protection and Sanitation and Wood Preservation in an investigation of fire-resistant wood for railway buildings. A comprehensive progress report, offered as information, was submitted on this assignment. The committee first pointed out that wood may be treated to lessen its combustibility at the wood-preserving plants throughout the country that are equipped to treat wood with salt preservatives under pressure. Investigations on a large scale by various fire-testing organizations, it continued, have shown that wood impregnated under pressure with certain chemicals in water solution will reduce its fire hazard in proportion to the concentration of chemicals injected. For this purpose ammonium phosphate, ammonium sulfate, zinc chloride or chromated zinc chloride, boric acid and borax, alone or in combinations, are used.

The committee also took up the question of performance test requirements for fireproofing wood. Pointing out that fire-resistant wood can be treated for protection against fire, and also against decay and insects, the committee said that the fire-resistant treatment may be required to meet any of the current specifications, such as those of the Navy, the Army, and the American Society for Testing Materials. In addition, it said, the treatment included for protection against decay and insects may be required to meet the specifications of the federal government, the A. R. E. A., and the American Wood-Preservers' Association.

Next, the committee listed the current specifications covering fire tests of wood and the treatment of wood to make it fire-resistant. After commenting on each of these specifications, the committee set forth its recommendations regarding the procedures that should be followed by railroads in their efforts to obtain fire-resistant timber construction. For railroad use, it said, it is believed that a standard decay-resisting treatment should be incorporated with any treatment for fire resistance in order to serve the dual purpose of protection against decay and termites, as well as against fire. The applicability of the various current specifications to railroad construction were then discussed, and attention was also given to the effect of the chemicals used on the strength of wood.

The committee expressed the opinion that, until further experiences developed with treatment and the use of fire-resistant wood, it is believed advisable to follow the dictates of past experience. It has been practicable, it said, to supply millions of feet of fire-resistant lumber under Bureau of Yards and Docks Specification H8, Addendum "B", which contains a rigid requirement for the fire-resistant material, and it recommended that the general scope of this specification be adapted into a recommended A. R. E. A. specification. Accordingly, the committee prepared such a specification which was submitted this year as information.

Economics of Railway Labor

H. A. Cassil, Chairman*

This committee presented reports on three of its eleven assignments, including two final reports and one progress report, all of which were offered as information.

Labor Economies Derived from Cleaning Ballast

A final report was presented by the committee on its assignment to investigate the extent of the labor economies to be derived from cleaning ballast. The committee first discussed the importance of effective drainage in track maintenance, and emphasized the necessity of keeping the ballast clean if the benefits of good drainage are to be secured. It pointed out that the incidence of dirty ballast has been particularly troublesome during recent years because of the deferred maintenance that had accumulated during the depression years and because higher train speeds require a higher degree of refinement in the track surface. There is a growing appreciation of the fact, said the committee, that free draining ballast is important to good track maintenance and that failure to keep ballast clean will either result

* Chief Engineer, Pere Marquette

in an increase in track maintenance expenses, or a decline in the standard of maintenance. If ballast is kept clean, it added, much other maintenance work will be minimized.

The committee then went on to discuss the reasons why ballast becomes foul, the impracticability of renewing ballast whenever it becomes dirty, and the effects on track and track work of dirty ballast. It listed the various ways in which clean ballast results in labor economies, and discussed the reasons why the exact saving in man-hours or dollars cannot be determined.

Means of Increasing the Labor Supply

A comprehensive progress report, presented as information, was offered by this committee in connection with its assignment to investigate means of increasing the labor supply for maintenance of way work for the duration of the war to overcome shortages. The first part of the report discussed the extent of the over-all shortage of labor in maintenance of way work, and then considered separately the situation in the track, bridge and building, and signal departments, respectively.

Pointing out that the labor shortage is acute in all parts of the country, the committee said that the exact degree varies as between different sections, and with the character of the locality. The prospects for the immediate future were considered, and the problem of turnover was given attention. Pointing out that the usual sources of maintenance of way labor have disappeared, the report discussed briefly the possibility of employing war prisoners in such work. In a discussion of the causes of the loss of labor, the committee devoted considerable attention to the effects in this respect of the differential in wages paid by the railways and other industries. To overcome this situation, many railroads are working some or all of their gangs either nine or ten hours.

Because of the increase that has taken place in the cost of foods, a few roads have absorbed this increase in their charges for board as a means of holding men.

The committee then went on to describe the various innovations in recruiting practices that have been adopted by some roads. As a means of reducing labor turnover, attention is also given to the fact that many roads have introduced improvements in their housing facilities for maintenance of way labor and in the character of the food served at labor camps. After a brief discussion of the situation regarding selective service deferments, the committee proceeded to discuss the various expedients that various railroads have adopted in their attempts to augment the labor supply, these including the recalling of pensioned employees, the relaxing of age and physical requirements, the employment of high-school boys, the use of part-time workers, and the employment of women and of war prisoners. The extent to which foreign labor has been imported, especially Mexican nationals, was discussed, and other means of obtaining labor, not heretofore mentioned, were considered briefly. The committee also took note of the reduction that has occurred in the efficiency of track labor under present conditions. Appended to the report were a number of conclusions which included the listing of 25 possible measures for attracting and keeping labor.

This report was released for advance publication and appeared in the *Railway Age* of January 15, page 190.

Shortage of Chemicals and Fuel Oil for Weed Destruction

One of this committee's assignments is to review the means available for meeting the current shortage of chemicals and fuel oil for the destruction of weeds in railway tracks. In a final report on this subject, which was presented as information, the committee first discussed the importance of weed eradication, noting that the methods that have been developed for eliminating weeds and other vegetation in track are spraying with chemicals, and the use of oil in spraying or burning the vegetation. The committee pointed out, however, that the chemicals and oil are "critical" materials and should, therefore, be conserved.

Arsenic and sodium chlorate, said the committee, are the two chemicals commonly used for weed spraying, and both of these are listed among the critical materials. In order to conserve them, it said, the railroads have tested various compounds to reduce the percentage of arsenic or sodium chlorate, and have also tried substitute materials. Much of the report was devoted to a discussion of the various compounds that have been tried and the results obtained. In most instances, it was noted that these materials have proved ineffective.

After a brief discussion of the practice on several roads of killing vegetation with steam, the committee undertook a discussion of the use of oil burners in weed eradication. It pointed out that, while there is no substitute for oil in weed burners, oil can be conserved by application of the proper methods, and the use of the right oil. In this connection, the results of a number of tests were quoted, which indicated that best results are to be obtained by burning the weeds lightly, and that, in the operation of oil burners, speeds of seven to eight miles per hour are just as effective as speeds of four to six miles per hour. Appended to the report was a set of seven conclusions.

This report was accepted without discussion.

Report on Clearances

A. R. Wilson, Chairman*

Under Revision of Manual this committee presented a clearance diagram for turntables, which it recommended for adoption and publication in the Manual. A note was appended to the report in which the committee recalled that in 1943 the association adopted a report of Committee 15, Iron and Steel Structures, which included a clearance diagram for turntables that was inconsistent with a similar diagram (Fig. 2) in the section on Clearances of the Manual, and that a note was inserted on the page in the Manual carrying Fig. 2 recommending that the diagram developed by Committee 15 be used in its stead pending a review of Fig. 2 by the Committee on Clearances. This review has now been carried out and the revised diagram, as presented for adoption by the committee, is in agreement with the diagram developed by Committee 15.

The recommendations of the committee were approved without discussion.

Economics of Railway Location and Operation

M. F. Manion, Chairman†

This committee presented reports on four of its ten assignments, including two progress reports and two final reports, all of which were submitted as information.

One of this committee's assignments is to develop methods or formulas for the solution of special problems relating to more economical and efficient railway operation. In a progress report on this subject, the committee stated that since its last report, presented in 1943, on increased road capacity, locomotive saving and car saving, it had continued its studies of these subjects, as a result of which it had developed additional information. With reference to increased road capacity, the committee said that it had not as yet been able to determine the capacity of a given section of railroad from actual operating experience, or to develop a formula showing the increased capacity resulting from an improvement in the operation of trains. Until further data are available, the committee feels that it is advisable, in determining increased road capacity, to compare the present operation taken from the train sheets, with the proposed operation on the redispatched train charts and thereby determine the present increase in road capacity.

Regarding locomotive saving, the committee pointed out that in last year's report it had submitted four formulas for determining the saving in locomotives resulting from a given improvement in train operation. These formulas were listed, after which the committee tabulated certain information that had been learned regarding them in studies made during the last several years. A revised formula based on this new information was submitted and an example was given to illustrate its application.

With reference to the saving in cars realized as a result of an improvement in train operation, the committee pointed out that its report for 1943 included a formula based on the train-hours saved per day and the number of cars per train. This year the

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† Office Assistant to Chief Engineer, Bessemer & Lake Erie.

committee presented a revised formula, based on the average number of cars per freight train, and an example was given to illustrate its application.

Effect of High Speed on Railway Operating Expenses

A final report, submitted as information, was presented by this committee on its assignment to determine the effect of high speed on railway operating expenses. The committee first reviewed briefly the various reports that it has submitted previously on this subject. The remainder of the report was devoted to a presentation of the conclusions of the previous reports as to the effects of high speed on maintenance of way expenses, maintenance of equipment expenses, and transportation expenses.

Regarding the effect of high speed on maintenance of way expenses, the committee pointed out that it is generally conceded that high-speed operation is more damaging to track and roadbed than operation at lower speeds with equipment of the same weight. However, for various reasons, it is difficult, if not impossible, to determine the extent to which any disturbance to line, surface and gage is attributable to the operation of high-speed trains.

Regarding the effect of high speeds on maintenance of equipment expenses, the committee noted that new and radically different designs of equipment are now being used in high-speed service, and that the maintenance cost per mile or ton-mile of this equipment cannot be determined precisely because of the relatively short period of time it has been in service. With respect to what might be called standard equipment, the committee is of the opinion that, since wear and tear tend to increase with speed, it is reasonable to believe that higher speeds result in a corresponding increase in maintenance costs.

Turning to a discussion of transportation expenses, the committee first pointed out that increases in speed are accompanied by greater fuel and water consumption by steam locomotives, the increases occurring at a more rapid rate than the increase in speed, and that higher speeds have the effect of making it necessary to use more locomotives to handle a given volume of traffic.

It was further pointed out that as train speeds are increased, more trains are necessary to handle a given volume of traffic, and that the operation of a larger number of high speed trains may interfere with, and delay the movement of, the slower tonnage trains. The actual amount of interference depends on many factors, said the committee, and the determination of its effect on the over-all cost of operation must be evaluated by specific study rather than on the basis of generalizations.

It should not be overlooked, said the committee, that the more economical operating speeds may not be productive of the maximum revenues. For instance, it said, faster speeds which permit service of the type that the traveling and shipping public has come to expect may produce a more rapid increase in revenues than in expenses and, conversely, slower and more economical speeds may result in loss of traffic to competing agencies, which conceivably could more than offset the operating savings. The committee concluded that no generalized method can be given for determining the actual increase of railway operating expenses occurring as a result of higher speeds, but it believes that the method set forth in previous reports of this committee should be of material aid to those making studies of this character.

Modern Power Units and Railway Location and Operation

A progress report, offered as information, was submitted by this committee, in connection with its assignment on the development of modern power units and the effects on the economics of railway location and operation. This report was devoted mainly to a discussion of locomotive utilization and shop and engine-house utilization. Regarding locomotive utilization, the committee said that the operating conditions during the period 1938 to 1942 include most of the elements necessary for a preliminary study of this subject; that is, it said, the operations amount virtually to a series of tests for determining the maximum use that can be obtained from locomotives in various services. To illustrate this point, the committee presented a number of tables, one of which traced the trend of freight traffic during the period in question, while another showed how the number of locomotives used by the railroads had decreased during the same period, notwithstanding the fact that there was a large increase in traffic. In a third table comprehensive information was presented on locomotive utilization in freight, passenger and switching service, respectively.

Much of the text of the report was devoted to defining and explaining the methods and terms used in determining locomotive utilization, and the arbitrary method that has been adopted for classifying locomotives. Part of the report was devoted to a discussion of some of the considerations that influence the manner in which locomotive time is charged to the mechanical department. The committee concluded that, in practice, the maximum time that locomotives can be kept in service depends upon so many variables that it can only be determined experimentally when conditions are suitable, or by experience.

Economics of Reduced Rate of Curvature on Existing Lines

Pursuing its assignment to report on the economics of reducing the rate of curvature on existing lines, the committee presented a final report which was submitted as information. The first item in the report was a summary of the objectives that are generally sought through reductions in the rate of curvature, these including (1) increased speed at which trains may be operated over the curve in order to achieve faster schedules; (2) increased riding comfort for passengers; (3) operating savings through increased fuel economy and reduction in the wear of rail, brakes, wheel flanges, etc.; and (4) increased speed at which trains may be operated over the curve for the purpose of conserving or accumulating momentum so that trains of heavier tonnage can be operated up a ruling grade on or at some point beyond the curve. Each of these objectives was then taken up separately and discussed in some detail. Appended to the report were four conclusions.

The entire report was received without discussion.

Roadway and Ballast

F. W. Hillman, Chairman*

This committee presented reports on one or more parts of all thirteen of its assignments, most of which were progress or final reports, offered as information, although several of them included recommendations regarding Manual material.

Physical Properties of Earth Materials

Under its assignment to investigate the physical properties of earth materials, the committee recommended that the word "footing" be substituted for "foundation" in the definition of Foundation Pit in the Glossary, making it read: Foundation Pit.—An excavation made for laying the footing of a structure. This recommendation was adopted.

Natural Waterways: Prevention of Erosion

Under its assignment to devise means of preventing erosion in natural waterways, the committee called attention to the fact that last year it had presented for adoption a report on the prevention of erosion which dealt with a particular phase of this subject, namely, Reduction of Gradient, Check Dams, but that, because of certain objections embodied in the written discussion, the Board of Direction committee that was appointed to review such reports referred this particular report to the committee for further study. During the year, the committee made certain revisions in the report in the light of the objections received and, as revised, it was re-submitted this year with the recommendation that it be adopted for publication in the Manual. This recommendation was approved.

Culverts

Reports were submitted by the committee on three of its assignments under the general heading of Culverts. In connection with the assignment to develop specifications for structural plate pipe and arches, the committee said that it had presented a set of such specifications to the association in 1943, with a recommendation that they be adopted and published in the Manual, but that they were withheld from the letter ballot because of certain criticisms that were received in the written discussion on them.

* Assistant Engineer Maintenance, Chicago & North Western

This year, the specifications were re-submitted for adoption with certain modifications that were made in the light of the comments received. The recommendation that these specifications be adopted was approved.

Another of the committee's assignments under culverts is to develop specifications for asphalt coating and paving of corrugated iron culvert pipe. Reporting on this assignment, the committee said that it had been at work for nearly two years seeking to develop such a specification which would insure simplicity in the test apparatus as well as in the sampling of any size or length of pipe included in a shipment. The first draft of such a specification has been prepared, but it has not yet been submitted to the full committee for study and criticism.

In the report on culverts, the committee also recommended two relatively minor revisions of the specifications for corrugated metal pipe for subdrainage. These were approved.

Formation of Roadway: Recent Grading Projects

In a continuation of its study of recent grading projects that was first reported on in 1943, the committee reported this year several new line projects involving considerable grading, which were carried out in the last several years. The material presented was largely in the form of a series of tables giving general data on the projects; the principal types of grading equipment used; the manner in which the compactable material was treated and the resulting settlement; the manner in which the foundations of the fills were prepared; and the preparation of the subgrade.

Roadway Drainage

One of the assignments of this committee is to report on the extent to which recommended practices of the association relative to roadway drainage are being followed by the railroads. Reporting on this assignment, the committee stated that its study of the subject has indicated the seriousness of the roadbed drainage problems that have been raised because of higher train speeds and denser traffic, and has shown that many railroads are making earnest efforts to solve these problems or to reduce to a minimum the aggravations caused by them. Brief comments were included in the report on the use of off-track equipment in grading and ditching work, and on the use of creosoted and cypress timber for sub-surface drains. The committee described in some detail a drainage system installed by one railroad which consisted of sub-surface drains of timber construction.

Roadway Protection

Under the general subject of roadway protection, the committee submitted a progress report, offered as information, in connection with the assignment to report on methods used in stabilizing the roadbed. Pointing out that a report on this subject was made last year, the committee said that only meager information on grouting was then available, and for this reason, the report for this year was devoted to this phase of the subject. After discussing briefly the principles underlying the grouting of the roadbed, the committee summarized the claims of both the proponents and opponents of this procedure. It also discussed the cost of grouting, the necessity of obtaining the proper fluidity in the mix, and the permanence of the results obtained.

Recent Tunnel Construction and Maintenance Problems

In dealing with its assignment to report on recent tunnel construction and maintenance problems, the committee presented a progress report, offered as information, which consisted largely of a discussion of various types of work that have been found necessary in old tunnels. Specifically, the report gave consideration to methods of stopping leaks, of several methods that have been employed for reinforcing tunnel linings, of the procedure that was used in removing 3 ft. of rock from the roof of a tunnel to obtain increased clearance, and of certain considerations involved in maintaining the roadbed in tunnels.

Corrosion Resisting Fence Wire

Under its assignment to investigate corrosion-resisting fence wire, the committee reported that it is collaborating and receiving reports of the exposure tests of farm field fencing, barbed wire, unfabricated wire, wire strand and chain-link fence, that are being made by a committee of the American Society for Testing Materials. The primary purpose of these tests, it said, is to determine the effect of such factors as base metal composition, gage, type of coating, weight of coating, etc., on the serviceability of zinc-coated strand, barbed and woven wire fencing, and unfabricated wire. First the committee listed the various proceedings of the A. S. T. M. in which the plan and progress of the tests were discussed, after which it quoted from A. S. T. M. reports giving the results of tests of the weight loss specimens and on specimens removed for tension tests.

Specifications and Plans for Telltales

Reporting on its assignment to prepare specifications and plans for telltales, overhead and side, the committee called attention to the fact that last year it presented as information a tentative draft of specifications for one, two, three, and four-track overhead metal warning signs and metal side warning signs. This year the committee recommended that these specifications, with slight revisions, be adopted and published in the Manual. The committee also recommended that the three plans that were presented with the specifications last year be incorporated in the Manual as part of the specifications. These plans had also been revised slightly. The committee's recommendations were approved.

Ballast Specifications and Tests

Reports were presented by the committee on all three of its assignments under the general subject of ballast specifications. One of these assignments is to prepare consolidated specifications for prepared ballast of crushed stone, crushed slag and gravel. Under this assignment, the committee recommended for publication in the Manual, with certain revisions which were enumerated, the proposed consolidated specifications for prepared ballast which were published as information last year. The committee also presented a standard method of test for quantity of soft particles in ballast, which it recommended for publication in the Manual as a supplement to the consolidated specifications. These recommendations were approved.

Another of the committee's assignments under ballast is to review the specifications of leading railroads to determine their conformity with A. R. E. A. recommendations. To carry out this assignment, the committee reviewed the specifications of 46 railroads and the results of this review were given in detail in the report, both in the form of tabulations and in written discussion.

Another of the committee's assignments under the general subject of ballast is to report on the use of chats ballast, with recommendations as to whether the association should prepare specifications for such ballast. As a result of information which it has developed on the use of chats, the committee said it had reached the conclusion that it is not practicable to write generally acceptable specifications.

With reference to its assignment to develop tests for determining the effect of tamping on ballast, the committee first referred to a previous report on this subject, in which use was made of a tamping test to simulate the actual tamping of ballast under the ties. Commenting on this report, the committee said that it had before it the problem of investigating the feasibility of devising a suitable tamping test, and that it proposed to investigate the practicability of conducting a tamping test with the thought of being ready to proceed when the manpower situation becomes more favorable.

This year's report also included remarks on the application of the Los Angeles abrasion test to the testing of ballast. Moreover, discussing sub-ballast, the committee said that the question is how to determine the suitability of the different types in use for the function which they must perform, namely, that of preventing mud pumping and mud infiltration. Thus far, said the committee, no outline of a proper research on sub-ballast has been made, and it is seeking information as to the proper method of procedure.

Use of Asphalt in Ballast

A progress report, offered as information, was submitted by the committee on its assignment to investigate the use of asphalt in ballast. The committee first outlined certain work that had been done during the year on the 600-ft. test section of asphalt-coated stone ballast on the New York Central at Bryan, Ohio, after which it described in considerable detail the manner in which the asphalt was placed on a 2,485-ft. test section of asphalt-coated ballast on the Illinois Central, at Manteno, Ill.

Specifications for Riprap

Under its assignment to prepare specifications for riprap, with

special reference to establishing terms designating the size of riprap that are more definite than those commonly used, the committee presented a set of specifications as information. It is the intention of the committee to present these specifications in 1945 for adoption as recommended practice, and to this end it is desirous of receiving criticisms and comments regarding them.

Iron and Steel Structures

J. E. Bernhardt, Chairman*

The report of this committee was confined to a number of recommendations under Revision of Manual involving revisions and additions in the specifications in the Manual for steel railway bridges. The changes recommended involved paragraphs dealing with the information to be given bidders, the distribution of live load, impact, centrifugal force on curves, combined stresses, secondary stresses, preparation of holes, shop assembling, reaming in shop-riveted floor sections, field connections, and fit of stiffeners.

All of these revisions were approved except two formulas which were withdrawn by the committee.

Maintenance of Way Work Equipment

C. H. R. Howe, Chairman†

This committee presented reports on eight of its eleven assignments, including three progress reports, offered as information, and five final reports, four of which were submitted as information, while the fifth was recommended for adoption and publication in the Manual.

Standardization of Parts and Accessories for Motor Cars

In a progress report on its assignment relative to the standardization of parts and accessories for railway maintenance motor cars, the committee presented as information an exemplary classification of motor cars, together with the essential specification requirements which a railway may desire to include in formulating its own specifications. The committee's classification of motor cars is as follows: MW-A Light Inspection—1 to 2-Man Car; MW-B Light Inspection—1 to 4 Man Car; MW-C Light Section; MW-D Heavy Section; and MW-E Heavy Duty. Each of these classifications was given as a separate heading under which the specification requirements were listed. It is the thought of the committee that each railroad adopting this classification would prepare its own forms with the name of the particular railroad, together with the sub-caption "Maintenance of Way Department" given at the top of each sheet.

Instructions for the Care and Operation of Work Equipment

Reporting progress on its assignment to prepare a manual of instructions for the care and operation of maintenance of way work equipment, the committee stated that the necessary information is being obtained from committee members, work equipment manufacturers, work equipment operators and repair men, and from other available authentic sources. It is proposed that the manual assume a loose-leaf form to provide for future revisions, additions and deletions, using a system of page numbering that will permit revisions with the least confusion. A general outline of the manual was presented in the report.

New Developments in Roadway Machines

A final report, offered as information, was submitted by the committee on its assignment to report new developments in roadway machines. The committee observed that there has been no extensive development of new roadway machines recently, but that there have been some new applications of existing machines in addition to the remodeling necessitated by the scarcity of certain metals. Among other things, the committee noted that one of the popular track wrenches has been redesigned to reduce its weight and the requirements for critical materials; that one railroad has developed a tie plate gaging tool for general use on its rail-laying trains, which tool was described in some detail; and that another railroad that has operated its discers and weed mowers separately for years is now pulling and pushing the mowing machines with the discers to obtain more efficient operation.

Considerable attention was given in the report to the use of the power ballaster for tamping track. Explaining its interest in this machine, the committee said that while it has been in use for many years, its application has now been extended to the surfacing of high-speed tracks on all kinds of ballast. After describing the power ballaster briefly, the committee recounted in some detail the experience of one railroad that used the machine to surface a considerable mileage of high-speed gravel-ballasted track.

Mowing Machines

The committee presented a final report, offered as information, on its assignment to make a study of mowing machines. Preliminary to the main part of this report, the committee noted that the cutting and eradication of weeds on the rights of way of American railways has always been an important operation, and that for the duration of the war difficulties in the way of this work will be caused by the scarcity of oils for the burning of weeds and of chemicals for their destruction.

Turning to the subject of mowing machines, the committee said that manufacturers of power mowers have been improving their machines for the last 30 years, with the result that many mowers now offered will do almost any mowing on the right of way. It urged that railway officers responsible for their selection should become thoroughly familiar with the various types and models, and should choose those best adapted to handle vegetation of the character encountered on their individual lines. Pointing out that many different kinds of mowers are built by several manufacturers, the committee devoted most of its report to listing and describing briefly the various machines, including on-track mowers, tractor mowers, motor-operated sickles, and motor-operated lawn mowers and trimming cutters. Each of these types was discussed separately and the advantages and disavantages of each machine were given.

Power Spike Pullers

A final report, offered as information, was presented by the committee on its assignment relating to power spike pullers. The committee stated that only two types of such spike pullers have been developed—one a self-contained mechanical unit, and the other a pneumatic machine. The latter type was first discussed briefly, after which the committee devoted the remainder of its report to the mechanical spike puller. The design and construction of this machine were first described in some detail, after which the committee discussed such pertinent factors as the method of operation, the rate at which spikes can be pulled and certain precautions to be observed in the operation of the machine.

Wire Rope Used With Work Equipment

Regarding its assignment to report on the use of wire rope with work equipment, the committee called attention to the fact that in 1943 it submitted a report on this subject which discussed the construction of wire rope and its application to maintenance of way work equipment. At that time, this material was presented as information with the recommendation that the assignment be discontinued. However, the suggestion was made that the material be submitted for adoption as recommended practice. Accordingly, the committee recommended in this year's report that the material bearing the title, Wire Rope Used With Work Equipment, which appeared in the Proceedings for 1943, be adopted for publication in the Manual. This recommendation was approved.

Power Saws for Cutting Rail

The committee submitted a final report, offered as information, on its assignment to investigate the use of power saws for cutting

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† Cost Engineer, Chesapeake & Ohio.

rail. It pointed out that the use of power rail saws has increased in the last few years and that they have become standard equipment on some railroads for use (a) in terminals around interlocking plants and crossings; (b) to a lesser extent with rail gangs; and (c) as part of the equipment assigned to track supervisors. It was also noted that on some roads power saws in combination with drills and power grinders are being used for cropping rails in track. After brief reference to the essentials of a power rail saw, the committee discussed its advantages as a means of cutting rail in preference to other methods in common use.

Turning to the use of such saws for cropping rail in track, the committee submitted a brief description of an operation in which a battery of the saws was used for this purpose. The equipment assembled for this job, which involved the cropping of 85-lb. rail, consisted of eight power saws, three power drills, two grinders and two power wrenches. In addition, the cropping work was followed by tie adzers and the track was retimbered and resurfaced. It was reported that about 11 min. were required to make each saw cut, including the time consumed in moving the saws ahead.

Means for Conserving Labor and Material

A comprehensive discussion was presented by the committee in reporting on its assignment to continue the study of means for conserving labor and materials, including the adaptation of substitute non-critical materials. The committee first referred briefly to the general character of the substitutions that have been made in the manufacture of various types of maintenance equipment, pointing out that, since these substitutions have all been made before the equipment gets into the hands of the maintenance of way forces, there is little opportunity for these forces to make substitutions after the machines are placed in operation.

The committee then pointed out that material and labor can be conserved (1) by equipping the forces with power machines and tools that are adapted for the work they are doing; and (2) by better and more careful maintenance of the machines and tools that are available. Discussing the second of these two measures, the committee stressed the importance of an organization to handle the maintenance and repair of work equipment, pointing out the desirability of selecting operators with care, of thorough and persistent inspection, and of adequate lubrication and cleanliness.

Turning to a consideration of specific ways of conserving material, the committee mentioned the desirability of using brake-shoe facings of suitable material and adequate size on motor cars; and the advantages of differential axles and demountable wheels on such cars; the use of heavy-duty or rock guards on track mowers in place of those ordinarily supplied by the manufacturer; and the opportunities for extending the life of tamping tools by building them up by welding and hardening the striking ends. The committee also mentioned the desirability, as a conservation measure, of sending power machines to the shop for overhauling at the end of the working season. This report also contained a detailed discussion of the process known as metallizing as a means of building up worn parts of work equipment by spraying metal on them and then grinding to finish them to the required dimensions. The report was concluded with a brief discussion of the use of magnaflux inspection as a means for saving materials indirectly by reducing failures in service.

The report was received without comment.

Report on Masonry

A. N. Laird, Chairman*

Progress reports were submitted by this committee on three of its nine assignments, one of which contained matter that was recommended for adoption and inclusion in the Manual.

Literature on Railroad Masonry Work

Under its assignment to furnish bibliographies and reviews of current engineering literature pertaining to railroad masonry work, the committee commended, as a valuable reference work, the publication of the A. S. T. M. entitled Report on Significance of Tests of Concrete and Concrete Aggregates, second edition, 1943. This report, said the committee, consists of 22 papers written by members of the A. S. T. M. who are recognized as leaders in the study of concrete. To indicate the scope of the report, the committee listed the titles of the papers and their authors.

Concrete and Reinforced Concrete Structures

In connection with its assignment to prepare specifications for concrete and reinforced concrete railroad bridges and other structures, the committee pointed out that in 1942 it presented as information a tentative draft of specifications and that during the ensuing year numerous revisions were made. Last year these sections that had undergone basic revisions were submitted in revised form as information. With minor revisions, the specifications were submitted this year with the recommendation that they be adopted for publication in the Manual to replace the present comparable material.

This recommendation was approved.

Adaptation of Substitute Non-Critical Materials

With reference to its assignment to develop means for conserving labor and materials, including the adaptation of substitute non-critical materials, the committee said it had reviewed the proposed National Emergency Specifications for Reinforced Concrete Railway Bridges prepared by the War Production Board, which are now pending. The specifications, it continued, have been drawn mainly from the A. R. E. A. Manual, with certain revisions. Following its review of the specifications, the committee prepared a statement of comments and suggestions, which was submitted to the WPB for its consideration.

Records and Accounts

H. L. Restall, Chairman*

This committee submitted progress reports on six of its nine assignments, all of which were offered as information.

Revision of Manual

Under Revision of Manual, the committee reported that, in cooperation with the secretary, it had completed the rearrangement and editing of Chapter 11 of the Manual, and that the complete chapter, as revised, was printed and issued during the summer of 1943. In revising the chapter, the committee explained that gaps were left in the page numbers to allow for the future expansion of certain subjects, and for the replacement of some material which was withheld from the Manual temporarily because of obsolescence or other reasons, and which will be subjected to further study by the committee.

Bibliography

Following its customary practice, the committee presented a bibliography of books, pamphlets and articles dealing with the general subject of railroad records and accounts. This year's compilation contains references to material published between November 1, 1942, and November 1, 1943.

Regulatory Bodies and Courts

The report of the committee contained the usual résumé of developments of the current year in connection with regulatory bodies and courts. First, the committee reviewed briefly certain activities of the Interstate Commerce Commission, specially those of the Bureau of Valuation, pointing out that the inauguration of depreciation accounting for roadway property, beginning January 1, 1943 had placed additional burdens on railroad valuation forces. In addition, the committee discussed and quoted at some length from two decisions of the United States Supreme Court bearing on the use to be made of the I. C. C. valuations in railroad reorganization proceedings, as well as other collateral issues.

I. C. C. Valuation Orders, Reports and Records

Reporting on its assignment having to do with I. C. C. valuation orders, reports and records, the committee first reviewed briefly the

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* Valuation Engineer, Maine Central

provisions of the order of the commission inaugurating mandatory depreciation accounting for certain classes of roadway property, and called attention to the fact that, as a result of this order, several amendments to the accounting classifications became effective on January 1, 1944, by order of the commission.

It was also noted by the committee that, simultaneously with the adoption of depreciation accounting on roadway property, a number of carriers secured permission from the Bureau of Internal Revenue to change from the retirement basis to the depreciation basis for computing losses on retired roadway property. As a condition requisite to granting permission, the Bureau of Internal Revenue placed certain restrictions on the carriers, which were quoted by the committee and discussed in some detail. Included with the report was an exhibit showing a suggested breakdown of the primary accounts for the purpose of determining depreciation rates and expired lives and reserves.

I. C. C. Accounting Classifications

In reporting on its assignment to keep the association advised of changes in, and revisions and interpretations of I. C. C. accounting classifications, the committee followed its usual practice of listing the proposed accounting orders and classifications that had been submitted to it by E. H. Bunnell, vice-president, Association of American Railroads, and concerning which summaries of the opinions of the committee members had been furnished to Mr. Bunnell. The report also contained a list of orders of interest to engineers that had been issued by the commission since the committee's last report, and a listing of the new and revised rulings that had been issued by the Bureau of Accounts.

Avoiding Duplication of Reports

One of the assignments of this committee is to develop methods for avoiding duplication of reports and for simplifying and coordinating work under the requirements of the I. C. C. and other public authorities. This year the committee called attention to the fact that for years the Association of American Railroads has endeavored to reduce the increasing number of governmental reports required of railroads. In view of the acute shortage of manpower caused by the war, it is now believed that the time is opportune for further effort in this direction, and at the same time to review the reports and statistics maintained for managerial purposes with a view to the elimination of those that are no longer essential. Accordingly, a joint committee to study this subject was organized in 1942, the personnel of which was given in the report.

This report was received without discussion.

Special Committee on Impact

C. H. Sandberg, Chairman*

Brief progress reports, offered as information, were submitted by this committee on five of its seven assignments. Regarding its assignment to make tests of short steel spans with open floors, including the effects of track inequalities and worn wheels on such spans, the committee called attention to the partial report on this subject that it presented last year, and then stated that further tests were made during 1943 on a 34-ft. beam span, under both Diesel and steam locomotives, to secure additional information relative to the effects on the span of a battered rail joint and a welded rail joint at the center of the span. The committee reported progress in analyzing these data, as well as the data obtained under steam locomotives on the other short-span bridges.

In reporting on its assignment to make tests of steel spans with ballasted poured-in-place concrete decks the committee said that considerable information on the damping developed by such spans was secured in the analysis of data obtained by the Pennsylvania at Elkton, Md. A description and analysis of these data were presented in Bulletin 439, June-July, 1943. Regarding its assignment to make tests of dynamic shear in steel girders and truss spans, the committee said that, during the past season, it had measured the dynamic shears in the end posts and diagonal members of a 160-ft., single-track through riveted truss span under steam passenger and freight locomotives. During these tests, the dynamic stresses in the truss hangers, with panel points 20 ft. 4¼ in. center to center, were measured in connection with the committee's assignment to conduct tests of impact in columns and hangers of steel spans.

Another of this committee's assignments is to make analyses of additional data from impact tests. Under this assignment it referred to the tests on the Pennsylvania at Elkton, the results of which were reported in Bulletin 439.

This report was received without discussion.

* Assistant Bridge Engineer, Atchison, Topeka & Santa Fe

Report of Committee on Ties

John Foley, Chairman*

Progress reports were submitted by this committee on three of its six assignments, two of which were presented as information while one was in the form of recommendations for the revision of Manual material.

Extent of Adherence to Specifications

Reporting on its assignment to determine the extent of adherence to specifications governing the production and acceptance of ties, the committee said that, in lieu of the inspection trips that are customarily made in carrying out this assignment, which were dispensed with last year because of wartime travel conditions, it had undertaken, by means of correspondence with its members and others, to learn the nature, extent and effect of the substandard inspection practices that had been reported to it. First, the committee noted that the deficiency in general production which it reported a year ago is continuing, and is still due to insufficient and inefficient labor and equipment. After discussing briefly the effects of this decreased production and the increased demand on inspection practices, the committee stated that, as was to be expected, both the railroads and the suppliers of ties declined to provide specific information in verification of the rumors that substandard practices are being followed.

However, certain information in this regard was received, which was summarized in the report. In its concluding remarks the committee said: "In those parts of the country where the greatest deviation was reported, the situation is improving rapidly and the committee believes that this is due to the realization by those responsible of the futility of the practice and to the stabilizing of tie prices by the O. P. A. While there may be room for differences of opinion regarding the fairness of the prices in comparison with those for other forest products, the existence of ceilings contributed to the control of a situation which could have been marked by competition that would have been characterized by recklessness as to price, quality and size."

Tie Renewals and Costs

Following its customary practice, the committee presented tabulations of tie renewals and costs for 1942 and the last five years, pointing out that both the number and cost of the renewals for 1942 were higher than in any of the last five years. Based on data reported annually to the Interstate Commerce Commission by railroads in the United States and to the A. R. E. A. by roads in Canada, these tables were given advance publication in Bulletin 439, June-July, 1943. (Abstracted in the *Railway Age* of July 17, 1943, page 98.)

Cause and Control of Splitting in Railroad Ties

In reporting on its assignment to investigate the cause and control of splitting in railroad ties, the committee recommended the deletion of the material now in the Manual on anti-splitting devices and its replacement with new material, including instructions for the application of anti-splitting devices and specifications for devices to control the splitting of wood ties. In explaining the reasons for this recommended revision, the committee said that there is no current complete A. R. E. A. standard for so-called tie irons. Moreover, it said, the chemical composition and shapes and sizes at present provided for are no longer adequate. Also, war conditions have necessitated the consideration of more than one kind of steel, and the three kinds of steel (open-hearth

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Bessemer and shell) included in the new material have proved in widespread use that they can be formed and driven satisfactorily. Further, the recommended specifications avoid definite designs and dimensions, and thus do not commit the association to favoring only the three forms now illustrated; but they provide sufficient control of general design and manufacture to assure an iron which can be applied with minimum damage to the wood into which it is driven.

These specifications were adopted.

Report on Track

W. G. Arn, Chairman*

This committee submitted reports on nine of its thirteen assignments, of which six were presented as information, while the other three contained recommendations regarding Manual material.

Plans and Specifications for Track Tools

One of the committee's assignments is to prepare plans and specifications for track tools, including their repair and reclamation, with recommended minimum limits for reclaimed tools. Reporting on this subject, the committee called attention to the fact that the War Production Board had placed certain restrictions on the sizes and types of tools and on the materials to be used in the manufacture of some of the tools covered by A. R. E. A. recommended plans. Taking into consideration this fact, and also the desire to reduce, so far as practicable, the number of recommended types, and also to adopt improved designs where the need for such improvement is indicated, the committee recommended a number of changes in the material now in the Manual relating to track tools. The types of tools involved in these recommended changes included spike mauls, sledges, track chisels, lining bars, rail tongs, track adzes, and double-faced sledges. The committee withdrew its recommendations on plans for double-faced sledges, pending further investigation. The other recommendations were adopted without discussion.

Plans for Switches, Frogs, Crossings, Etc.

Under its assignment to prepare plans for switches, frogs, crossings and spring and slip switches, the committee said that during the year it had prepared a plan showing the modifications recommended in adopted plans of switches to permit their use with retarded action spring mechanisms. Designated as plan No. 181-44, "Spring Switches," this plan was prepared in collaboration with the Signal Section of the A. A. R. It was offered by the committee for adoption as recommended practice and publication in the Portfolio of Trackwork Plans. This plan was adopted without discussion.

The committee also said that it had given further study to the development of railbound manganese steel frogs to meet the requirements of present-day heavy wheel loads, and that a plan for a No. 10 railbound manganese steel frog using 131-lb. RE rail had been prepared with the assistance of the Standardization committee of the Manganese Track Society. This plan was presented this year as information for test installations. E. M. Hastings (R. F. & P.) inquired if manufacturers were prepared to make these frogs. E. W. Caruthers (Penna.), chairman of the subcommittee, replied that two companies were preparing to make them and others would undoubtedly do likewise.

Prevention of Damage Due to Brine Drippings

Reporting progress on its assignment to investigate means of preventing damage due to brine drippings on track and structures, the committee said that, as indicated in previous reports, laboratory investigations have indicated that the addition of a small amount of sodium dichromate, neutralized with soda ash, to the brine in refrigerator cars acts as an effective inhibitor. However, due to various factors, it was found that it would be necessary to add the inhibitor after the brine has left the interior of the car. According to the committee, plans have been made to construct a tank in the laboratory of the Chicago & North Western, whereby the test can be made with various filter designs in an endeavor to develop a type of filter which will satisfactorily add the desired amount of the inhibitor to the brine.

* Assistant Engineer, Illinois Central

Welding of Manganese Castings in Special Trackwork

Under its assignment to investigate the welding of manganese castings in special track work, the committee presented additional information this year on the investigation that is under way on the Chicago, Milwaukee, St. Paul & Pacific. In this test, 24 manganese castings furnished by several manufacturers were installed in a heavy-traffic slow-speed freight track of the Milwaukee near Mannheim, Ill., in November, 1939, in which the castings were assembled in three panels of eight each. These castings had become so worn by the latter part of 1942, that it was decided to weld two panels of eight castings each which were showing somewhat more wear than the third panel. The welding program followed in repairing these castings, the manner in which the work was done, and various observations made while it was in progress were discussed in detail in the report, which was illustrated by means of photographs and a number of oscillograms of current and voltage.

This committee also has under observation an additional test on the Toledo terminal involving 11 No. 9 solid manganese turnout frogs which were installed in January, 1942. These frogs had become so battered by November, 1943, that it was concluded that they should be built up by welding. Accordingly, it was decided that five of the frogs should be built up using bare nickel-manganese rod with variations of welding procedure; five with bare copper-molybdenum-manganese rod using the same variations of welding procedure; and one with coated copper-molybdenum-manganese rod. Pertinent information regarding the welding of these frogs was given in the report, these remarks also being illustrated with photographs and oscillograms.

Bolt Tension Necessary for Proper Support of Rail Joints

With reference to its assignment to determine the bolt tension necessary for the proper support of rail joints, the committee submitted a progress report of the test installations that it has under observation on the Chicago, Milwaukee, St. Paul & Pacific; the Chicago, Burlington & Quincy; the Denver & Rio Grande Western; the Pennsylvania and the Erie. As in previous reports, the committee discussed each of the tests separately, describing them briefly and then giving data showing loss of bolt tension under traffic and the change in the out-to-out measurements of the joint bars. Following the individual reports, a detailed discussion of the test results was submitted this year, which gives a perspective of all results obtained to date.

Number and Placing of Anti-Creepers for Various Conditions

In carrying out its assignment to make recommendations on the number and placing of anti-creepers for various conditions, the committee sent a questionnaire to 33 of the larger railroads in the United States and Canada to secure information as to the general practices being followed with respect to the use of anti-creepers.

Twenty-eight replies were received, and these were summarized in a table which was submitted with the report. Also, a brief analysis of the replies was included in the text.

Noting that it had reviewed the records and experimental methods of rail anchoring reported by the railroads, the committee said it had selected eight methods of grouping anti-creepers, which it desires to have applied in one-mile stretches of track on at least three railroads in accordance with a diagram that was given in the report. Progress is being made in selecting locations for these tests.

Reactance Value of Spring Washers

The committee did not submit a report this year on its assignment to investigate the reactance value of spring washers, although it said that considerable progress has been made in accumulating information. Pointing out that field measurements of the loss of bolt tension under traffic have definitely shown that such loss of tension is due primarily to inward movement of the joint bars as a result of wear of the fishing surfaces, the committee said that for this reason the reactance properties of spring washers are quite evidently an important factor to be considered in controlling the rate of loss of bolt tension, but the field measurements have shown that the reactance properties of the track bolt and the joint bar and rail assembly must also be considered in this connection. It went on to say that construction of a rail joint slippage machine in the latter part of 1943 has provided a means of studying these reactance properties in the laboratory

and it is expected that a complete report on the assignment can be made by the committee next year.

Study of Stresses in Tie Plates

A comprehensive progress report, offered as information, was submitted by the committee on its assignment to study stresses in tie plates. This report was made up almost entirely of a detailed description of a series of laboratory tests that were made by the research staff of the Engineering division, A. A. R., on tie plates for 112-lb. rail, the text of the description being liberally illustrated with photographs, charts and drawings. To date no attempt has been made by the committee to draw any conclusions from its studies, although it said that some interesting principles have been indicated; for example, the effect on tie plate stress and depression into the tie of various thicknesses and lengths of tie plates and significant differences in stress distribution in the crowned tie plate.

Wood Preservation

H. R. Duncan, Chairman*

This committee submitted progress reports on four of its ten assignments, three of which were offered as information while the fourth included specifications that were presented for adoption.

Service Test Records of Treated Wood

Under its assignment to investigate service test records of treated wood, the committee presented a series of tabulations showing the results of the 1942 inspection of the test tie installations that are now under observation in the tracks of the Chicago, Burlington & Quincy, and of the 1943 inspection of the test tracks of the Chicago, Milwaukee, St. Paul & Pacific at the Fair Grounds, Madison, Wis., and near Hartford, Wis. The information relative to the test tracks of the Milwaukee was based on data submitted by the U. S. Forest Products Laboratory at Madison.

Destruction by Marine Organisms

Following its customary practice, the committee submitted reports on recent inspections of the various marine piling test installations that are now under observation by different agencies. This included detailed reports on the test installations in Panama, at Tiburon, Cal., and those that are under observation by the Chemical Warfare Service. Remarks were also included on the work of the New England Marine Piling Investigation, the New York Marine Piling Investigation, and of recent inspections made of the testing stations at Newport, Mass., Woods Hole, Mass., and Almirante, Panama.

Specifications for Creosote-Petroleum Mixtures

In connection with its assignment to develop specifications for creosote-petroleum mixtures, the committee presented a progress report which consisted mainly of brief discussions of four of the seven phases into which this assignment has been divided, the other three phases having been discussed last year. This year's report also included a set of specifications for petroleum for blending with creosote, which the committee recommended for adoption and inclusion in the Manual.

These specifications were adopted after some discussion, in which W. J. Burton (Missouri Pacific) asked if they were designed to secure a petroleum of suitable quality for mixture with creosote that would not form a sludge. R. S. Belcher (Atchison, Topeka & Santa Fe, chairman of the subcommittee) replied that these specifications would not prevent sludge but should insure a mixture with less tendency to sludge. He added that the proper mixing of creosote and petroleum was important. F. H. Rothe (Pennsylvania) mentioned that difficulty was experienced with the sludging in barrels of creosote petroleum, used in rail laying work for treating adzed ties. Mr. Belcher replied that probably improper mixing by the manufacturer was partially responsible.

Destruction of Termites and Ways of Prevention

In a brief progress report on its assignment to study the destruction caused by termites and to develop ways of prevention, the committee pointed out that, because of abnormal weather, it had not had an opportunity to make a detailed examination of the test installation at Florissant, Mo. However, the committee feels that this is not to be regretted because an additional year or two will show more conclusive results.

*Superintendent of Timber Preservation, Chicago, Burlington & Quincy

Water Service, Fire Protection and Sanitation

B. W. DeGeer, Chairman*

Reports on eight subjects were presented by this committee, including two final reports, submitted as information, four progress reports, also offered as information, and a report on Revision of Manual that included a number of recommended revisions.

Revision of Manual

In its report under Revision of Manual, the committee's first action was to recommend adoption of a footnote—"Base plate may be fastened to post by welding"—for insertion under Fig. 1311 in the Manual, which is a drawing showing standard steel 12-post water-tank towers. Next, it recommended deletion of the section on definitions of the specifications for welded steel water tanks, but submitted the following definitions for adoption and publication in the glossary:

Reservoir—A facility for storing or impounding for use as needed, water, oil or any other fluid.

Elevated tank—A storage tank supported on a tower.

These recommendations were approved.

Pitting and Corrosion of Boiler Tubes and Sheets

In a brief progress report on its assignment to investigate the cause of and remedy for pitting and corrosion of boiler tubes and sheets, the committee stated that, for reasons attributable to the war emergency, little progress can be reported on the study of embrittlement. It did note, however, that the methods for preventing embrittlement developed and reported by the committee during the last several years are continuing to produce satisfactory results. This was said to be particularly true of the use of sodium nitrate by several eastern roads.

Another development mentioned by the committee was the substitution of welding for riveting in the construction of locomotive boilers, a subject that is now under joint investigation with the Interstate Commerce Commission, Bureau of Locomotive Inspection. It stated that the danger of embrittlement will be practically eliminated if the Bureau of Locomotive Inspection approves the use of completely welded locomotive boilers.

Governmental Regulations Pertaining to Railway Sanitation

One of this committee's assignment is to keep the association informed of progress being made by federal or state authorities on regulations pertaining to railway sanitation. In a progress report on this subject, it stated that the activities during the last year were confined largely to a consideration of the new regulations of the United States Public Health Service on Drinking Water Standards, and the Sanitation Manual for Land and Air Conveyances Operating in Interstate Traffic.

Discussing each of these regulations separately, the committee first quoted in full the statement of the Public Health Service for drinking water standards. It then commented on certain aspects of these standards as they apply to the railroads. It noted that the new standards are of more concern to municipalities and state health departments than to the railroads, as water used for drinking purposes on cars in railroad service is obtained from city supplies in most cases, and, in any event, the bacteriological and chemical tests must be checked by the state health departments.

Turning to a consideration of the Sanitation Manual for Land and Air Conveyances Operating in Interstate traffic, the committee also quoted the adoption and promulgation statement, and called attention to the fact that an abstract of the features in this manual coming under the jurisdiction of railroad engineering and

* Engineer Water Service, Great Northern

maintenance departments had been outlined in its report for 1943. The committee said that any changes in railway facilities that may be required as a result of the new manual had been held in abeyance because of material shortages and lack of personnel.

Outlining this situation further, the committee said that the surgeon general of the Public Health Service had requested that the Association of American Railroads inaugurate a research program to review, study and experiment with possible methods of excreta exposal from railroad conveyances. This was referred to the joint committee on Railway Sanitation which, among other things, recommended that a qualified engineer be assigned to the problem, and also outlined an initial research program. The recommendation and the program were later endorsed by the Engineering, Mechanical and Transportation divisions of the A. A. R.

Fire Protection and Insurance Section, A. A. R.

Reporting on the principal current activities of the Fire Protection and Insurance section of the A. A. R., the committee first noted that, because of the urgent need for speed in production and transportation incident to the war emergency, there is a greater tendency for people to take chances in handling materials and equipment, and this factor has, no doubt, been the cause of accidents and serious fires. Referring briefly to statistics on fires for 1942, the committee noted that the greatest proportion of the fire loss for that year was caused by wrecks.

Discussing the increased fire hazard on railroads due to the large volume of petroleum traffic now moving, the committee described the various precautions that may be taken against this hazard, including the development of a low-pressure fog nozzle that provides an economical and effective method of fighting oil fires. The committee also touched briefly on the use of fire-resistant wood in railway buildings.

Electrophotometric Methods for Analysis in Water Service

A progress report, offered as information, was submitted by the committee in connection with its assignment to investigate the use of electrophotometric methods for the analysis of raw and treated boiler waters and boiler scale and sludge. Electrophotometric methods of analysis, said the committee, involved the use of instruments designed to measure the amount of light transmitted, under controlled conditions through either colored or turbid solutions prepared for the purpose in accordance with colorimetric or nephelometric methods of analysis. Next, the committee pointed out that there are a number of different kinds of electrophotometers, namely (1) the single-cell barrier-layer type, (2) the single-cell emissive type and (3) the two-cell type, and each of these types was described briefly. The remainder of the brief report was devoted largely to a discussion of the present status of electrophotometric analysis and its limitations.

Wayside Method of Boiler Water Treatment

The committee offered as information a progress report on its assignment to report on the wayside method of boiler-water treatment, with descriptions of chemical feeding equipment, etc. Following a few preliminary remarks dealing with the meaning of the term "wayside" and reviewing the development of the wayside method of boiler-water treatment, the committee next pointed out that there are three general methods of applying chemicals in this manner, namely, (1) direct application to locomotive tenders, (2) by-pass chemical feeders, and (3) chemical solution feeders.

The first two methods were discussed briefly, after which the remainder of the report was devoted to the third method, or chemical solution feeders. It was pointed out by the committee that the great differences between the various types of such feeders lie in the pumping equipment, the proportioning devices and the controls, and each of these aspects was discussed separately. Noting that several types of chemical pumps are available, namely, (1) centrifugal, (2) diaphragm, (3) rotary, (4) piston, and (5) Moyno, the committee said that the pumps most universally used for handling chemicals are the piston and Moyno types, both of which are of the positive displacement design.

With reference to control equipment for proportioning chemical solutions, the committee said that a variety of such equipment is available. Under this heading it first discussed the types of equipment used with relatively uniform water flow rates, after which it considered the equipment used with variable flow rates.

In pursuing its assignment to investigate the mechanics of foaming and carryover in locomotive boilers, the committee submitted a progress report which was offered as information. The first part of the report was devoted to a brief general discussion of the action that takes place in the steam boiler, and its influence on foaming. The committee then entered into a discussion of the factors that cause variation in foam height, and this part of the report was based mainly on results of a laboratory investigation to determine the height of foaming that is caused by varying proportions of different chemicals. A feature of this section of the report was a triangular graph giving data on foam height for 150 grains per gallon of various proportions of sodium hydroxide, carbonate and sulphate at a fixed evaporation rate.

The effect of suspended matter on foaming was also discussed at some length, including reference to the various substances that are in use to prevent foaming. Another aspect of the problem that was given consideration was the influence of the size of bubbles on foaming, and in this connection the report described a test that was made at Massachusetts Institute of Technology, which involved the making of several hundred feet of high speed moving picture film by the Edgerton stroboscopic process. Consideration was also given to the influence on foaming of the condition of the heating surface and of boiler design. In the latter connection, the committee expressed the opinion that more steam space is needed, and it also feels that the location of the steam dome and the type and location of the blow-off cocks are of great importance.

Means of Conserving Labor and Materials

In reporting on its assignment to investigate means for conserving labor and materials, including the adoption of substitute non-critical materials, the committee first discussed in a general way the development of the system under which railroads now obtain their requirements of critical materials. Turning to the subject of salvage, the committee listed the various types of materials that have been reclaimed by water service departments. The use of substitutes in the same department was then given consideration, after which a number of recommendations were made as to ways in which manpower can be conserved by water service departments. Appended to this report was a set of five conclusions dealing with the procurement of materials, the use of salvaged and substitute materials and the conservation of manpower.

The entire report was received without discussion.

Waterproofing of Railway Structures

J. A. Lahmer, Chairman*

This committee submitted a final report, offered as information, on the comparative tests of waterproofing asphalts and coal tar pitches that it has been conducting, these tests being made in connection with its assignment relative to the waterproofing of railway structures. No reports were presented on either of its other two assignments.

Explaining its decision to conduct the tests, the committee said it had learned that in recent years there have been developments in the processes for refining bitumens, coal tar pitch in particular, which materially improve their characteristics for waterproofing uses. It has been advised from time to time by the manufacturers that the present A. R. E. A. specifications for asphalt for use above ground could be fulfilled only by asphalt produced from Mexican crude, and not by asphalts made from crudes produced in the United States. Accordingly, a research program was formulated to determine, in general, (1) to what extent the asphalt manufacturer could meet the present requirements of the A. R. E. A. specifications, and (2) to compare certain physical properties of asphalt and coal tar pitch under identical test conditions.

In response to a letter sent to nine producers of asphalt and four of coal tar pitch, the committee received seven sets of samples of asphalt and four of coal tar pitch. The tests to which each sample was subjected included (a) laboratory tests for physical properties; (b) tests for water absorption and leaching; (c) tests to determine the effects of aging; (d) the water per-

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meability test; (e) the acid permeability test; and (f) the impact test. These tests were described in some detail, and the results were discussed in the text and were also summarized in tabular form.

In conclusion, the committee stated, in substance, that, in general, the asphalt specimens tested comply with the requirements of the A. R. E. A. specifications for membrane waterproofing, asphalt for saturant and mopping above ground, except that only one sample (derived from Mexican crude) complied with the requirement for ductility at 77 deg. F. In the light of these tests, it was suggested that consideration be given to the revision of the A. R. E. A. specifications. Regarding the relative values of asphalt and coal tar pitch for the waterproofing of railway structures, the committee stated in part in its conclusions that asphalts have better ductility at low temperatures, which, in certain installations, would be of value in resisting cracking. Some advantage for asphalt was also indicated with respect to water or acid entering through holes resulting from bubbles in the coating. The tests to determine the relative resistance of asphalt and coal tar pitch to water permeation did not seem conclusive or entirely satisfactory to the committee. On the other hand, the pitches indicated less water absorption and this, said the committee, shows greater resistance to water permeation.

This report was received without discussion.

Yards and Terminals

W. J. Hedley, Chairman*

Reports were presented on five of ten assignments, including one final report, offered for adoption, one progress report containing Manual material and three progress reports presented as information.

Service Connections on Station Tracks

Under its assignment relative to service connections on station tracks, the committee offered a final report embodying instructions covering the location of steam and air connections at passenger stations, which it recommended for adoption and publication in the Manual.

This recommendation was approved.

Scales Used in Railway Service

Reporting on scales used in railway service, the committee called attention to the fact that last year it submitted as information a revision of its proposed specifications for the manufacture and installation of hand-operated grain-hopper scales. Since their publication, it said, these specifications have been made available to all known interested parties, and their comments have been solicited. In the absence of criticisms or comments warranting further revision of the specifications, the committee recommended them for adoption and publication in the Manual in the form in which they were published in the proceedings for 1943.

These specifications were adopted.

Classification Yards

Under its general assignment relating to classification yards, the committee presented this year a progress report, which it offered as information, in the form of an analysis of grades in recently constructed classification yards with retarders for the purpose of showing what, if any, changes have been made in respect to such grades in recent yard construction. This study is confined to grades from the apex of the hump down to the farther end of the classification tracks. For the purpose of this analysis, the committee chose four classification yards that were placed in service between the fall of 1940 and the fall of 1942.

Pertinent facts regarding the design and operation of each of these yards were given, and a tabulation was presented showing for all four yards the distances, drops and grades from the apex of the hump to important points on the hump and on the body tracks. According to the committee, the most interesting thing to note is that in three of the yards the body tracks are placed on a grade of 0.20 per cent and in the fourth yard on a grade of 0.18 per cent, which grades are a substantial departure from earlier practice. The grades of body tracks in the older yards, said the committee, usually range from 0.22 per cent to 0.30 per cent, the latter grade being an inheritance from the rider type of yard.

* Construction Engineer, Wabash

Freight Car Repair Facilities

A progress report, submitted as information, was presented on the committee's assignment to investigate freight car repair facilities. Referring to previous reports on this subject, the committee stated that, because many years have passed since these reports and recommendations were made, it is believed there have been sufficient changes in operation and design to warrant a revision of the present Manual material, and the present study is being made with a view to submitting recommendations for inclusion in the Manual at a later date.

The committee reported that, as a result of a canvass of the railroads, it found that 11 railroads have constructed freight car repair facilities since 1926, involving a total of 14 yards, of which 10 are what are known as "light" repair facilities and 4 as "heavy" repair points. Brief questionnaires were sent to the railroads involved, requesting pertinent information regarding these 14 yards, and replies were received from all of them. The replies covering the four heavy repair yards were considered too few to be used as the basis for determining a trend toward changes in the design or operation of such facilities. However, one of the railroads replied at considerable length regarding the unusual features of a new yard that was constructed in 1929, and this reply was incorporated in the committee report.

On the other hand, the replies covering the facilities for light freight-car repairs were summarized at considerable length. The report was concluded with an analysis of the various respects in which the light repair yards differ from A. R. E. A. recommended practice and of the new features embodied in them that are not mentioned in the Manual.

Bibliography

In accordance with its usual practice, the committee submitted as information a bibliography of published articles and papers on passenger stations and terminals; freight stations, terminals and yards; locomotive terminals and shops; and rail-and-water terminals.

Signals and Interlocking

H. L. Stanton, Chairman*

This committee has two standing assignments which are (1) to report on developments in railway signaling, and (2) to keep the association informed of the principal current activities of the Signal Section, A. A. R. This year the committee did not report on the first of these, but the usual progress report was presented on the second assignment.

In this report the committee first stated that, in connection with the conservation of vital war materials, the Emergency Specification Committee of the Signal Section has been active in cooperation with the War Production Board, and that additional emergency methods and practices for the conservation of vital war materials, as well as revised emergency specifications, have been issued. It was noted further that the ten standing committees of the Signal Section have been and are working on the assignment to investigate the possibilities of the use of substitute materials, and that representatives of the section were actively engaged in the tests conducted by the Special Committee on Blackout of Railway Equipment.

Regarding its regular activities, the committee reported that four of the series of chapters on American Railway Signaling Principles and Practices, prepared for the education of signal men and others desiring to study this subject, have been revised and brought up to date. The complete series will comprise 24 chapters, of which 23 have been completed and placed on sale to date.

The committee also listed 24 subjects that had been investigated by the Section during the 1942 fiscal year, and listed the revised and new specifications, drawing, instructions and miscel-

* Assistant Chief Engineer—Signaling, Pennsylvania System

laneous matter that have been submitted to letter ballot, and also a number of specifications that have been submitted to letter ballot for removal from the Manual.

In the absence of the chairman, this report was presented by W. M. Post (Penna.) who said that, while no report was being presented this year on the committee's first assignment, his company was experimenting with a new development that would probably be made the subject of a later report. This development, he said, was a train communication system that the company has installed on a 50-mile section of line, by means of which voice communication is permitted between the engines and cabin cars of freight trains and between the trains and wayside points. He described this system and its purposes and advantages in some detail. Otherwise the report was received without comment.

Wood Bridges and Trestles

R. P. Hart, Chairman*

Progress reports were presented by this committee on two of its seven assignments, one of which contained plans that were recommended for adoption and publication in the Manual, while the other embodied an emergency provision that had been adopted for inclusion in the Manual on the recommendation of the committee.

Improved Design of Timber Trestles

The plans were submitted in a report on the committee's assignment to develop improved designs of timber trestles, which was prepared in cooperation with a subcommittee having the assignment to develop specifications and design of fastenings for timber trestles, including metal connectors. The report included five drawings illustrating typical details of recommended practice, and four tables showing comparison of the unit stresses in both open-deck and ballasted-deck trestles for Cooper's E-60 and E-72 loadings. These tables and plans were submitted with the recommendation that they be adopted as recommended design for publication in the Manual.

This recommendation was approved.

Adaptation of Substitute Non-Critical Materials

Under its assignment to develop means for conserving labor and materials, including the adaptation of substitute non-critical materials, the committee noted that, on its recommendation, the following emergency provision had been adopted for inclusion in the Manual:

The Specifications for Structural Timbers and the Classification of the Uses of Lumber and Timber Under American Railway Engineering Association Specifications are superseded in part for the duration of the war by the National Emergency Specifications for the Design, Fabrication and Erection of Stress Grade Lumber and Its Fastenings for Buildings, made a part of War Production Board Directive No. 29, August 9, 1943, for the particular uses and under the conditions prescribed therein, but the above named specifications and classification are not superseded with respect to the use of stress grade materials for the construction and maintenance of railroad bridges, coal and ore docks, and other heavy railroad structures exposed to decay hazards.

This recommendation was approved.

Report on Highways

J. G. Brennan, Chairman†

Progress reports were presented by this committee on two of its six assignments, one of which was offered as information while the other contained Manual recommendations.

Revision of Manual

Under Revision of Manual the committee recommended a number of changes and substitutions in the specifications for highway crossing signs and signals, and also recommended that the heading on page 9-34.1 of the Manual, which now reads Suspended Overhead Highway Signals, be changed to read, Suspended Overhead Highway Sign. These recommendations were adopted.

Merits of Various Types of Grade Crossing Protection

In a progress report, submitted as information, on its assignment to determine the comparative merits of various types of grade crossing protection, the committee said that its work during the year had been limited to a continuation of the tests on two types of sheet reflectorized crossing signs now available, one type of reflecting metal letter signs, and a preliminary investigation of a substitute material for glass reflector buttons.

One of the two types of sheet reflectorized crossing signs consists of Scotchlite Reflectors. Reporting on this material, the committee gave the results of test installations that have been made on the Baltimore & Ohio Chicago Terminal and the New York Central. The other material of this type is known as the Decalcomania Transfer Process, and experimental signs of this material are in service on the Baltimore & Ohio Chicago Terminal and the Indiana Harbor Belt. The reflecting metal letters now being tested are known as Alzak, and are made of Arbuckle reflecting metal. A test installation of these letters has also been made on the B. & O. C. T.

The substitute material for glass buttons, concerning which a preliminary investigation is now being made, is a plastic known as Lucite. The committee said that no tests of this material in railroad crossbuck signs have been made because of the difficulty, under present conditions, of obtaining the necessary metal housings for the Lucite buttons. However, the material is in use by the Michigan State Highway Department for road marking, and the results of its use in this service were described briefly.

The committee recommended the adoption of glass bead reflector signs as an alternate standard to the present glass button reflector signs. This recommendation was approved.

Report on Electricity

D. B. Thompson, Chairman*

Progress reports, offered as information, were submitted by this committee on both of its assignments which are to report (1) on developments on the application of electricity to railway service, and (2) on the principal current activities of the Electrical section, Engineering division, A. A. R.

In the report on its first assignment, the committee referred at the outset to additional loads that have been placed on the existing plants as a result of the greater use of electrical power in the present emergency without a compensating increase in productive capacity. It noted that, although there have been no startling new developments in the application of electricity to railway service during the last year, the more intensive use of electricity is greatly aiding the railroads in carrying the enormous increase in traffic imposed on them by the war emergency. To illustrate the increase in electric power consumption, the committee reported that one carrier which handles both passenger and freight traffic on its main line by electric traction, had increased its consumption of electric energy for train propulsion from 160 million kw.h. in 1938 to over 240 million kw.h. in the last twelve months, the increase in demand on its own power plant, with no increase in generating capacity, being from 70 million kw.h. to over 150 million kw.h. annually. Developments in railroad electrification reported by the committee included the progress made by one road in modernizing its line circuit breakers by rebuilding them so as to give greater current rupturing capacity, and the installation by this same road of a novel water rheostat for the control of heavy line currents that are applied to melt ice from an exposed section of its contact system circuits during sleet storms.

Due to the shortage of weatherproof wire conduits and rubber covered wire, the committee reported that one railroad has entirely changed its system of roundhouse and shop wiring by carrying both power and lighting distribution wires on secondary racks supported from the rafters inside the house. Other developments noted in the report included reference to numerous instances in which railway electrical engineers have shown ingenuity in making available apparatus and materials suffice in cases where special

* Assistant Chief Engineer, Missouri Pacific
† Assistant Vice-President, New York Central System (deceased).

* Mechanical and Electrical Engineer, New York Central System

apparatus would have been provided if available; the shortage of Freon, which is used as a refrigerant in many air-conditioned cars; the fact that one road is seriously considering the conversion of its car lighting and associated electrical equipment to 110 volts; the problems that have been imposed on the railroads, especially on the East coast, because of the blackout and dimout requirements; the increasing use of fluorescent lighting in railroad cars and structures; the more extended use during the year of a new electrode in electric welding that promises to reduce the cost of welding apparatus; a finding that more intensive illumination of welding shops and the material being welded has resulted in better workmanship; and the fact that further development work is being done in the field of electronic radio communication between the front and rear ends of trains, and between trains and roadside stations.

In reporting on its second assignment, the committee first reviewed the work being done by various standing committees of the Electrical section. Among these, the Committee on Electrolysis is sponsoring a study of the electrolytic corrosion of steel in concrete; the Committee on Electric Heating and Welding presented a report on safety precautions to be followed in electric welding; and the Committee on Track and Third Rail Bonds has submitted specifications for welded-type rail head U-bonds and extended bonds for adoption and publication in the Manual. The committee also reported that the Electrical section had adopted emergency specifications for overhead wire crossings to meet current needs until such time as the revision of the complete specifications can be adopted; that the Electrical section has continued its representation on the Electrical committee of the National Fire Protective Association and has thus participated in the drafting of temporary revisions of the National Electrical Code; and that the Electrical section was represented on a special committee on black-out of Railway Equipment which submitted a report to the proper authorities, embodying conclusions that were reached as a result of black-out tests.

In the absence of the chairman, this report was presented by J. M. Trissal (I. C.). It was received without comment.

Waterways and Harbors

N. D. Hyde, Chairman*

Brief progress reports, both offered as information, were submitted by this committee on two of its seven assignments. With reference to its assignment to study the use of metal and other protective casings for pier structures under water, the committee said that means for the protection of timber piling in waters infected with teredo, limnoria and other marine borers are being investigated by laboratory and experimental installations involving the use of casings that include metal, terra cotta and concrete pipe and cast-in-place concrete casings. However, data are not yet available on which to base a conclusion on the effectiveness of the various forms of protection.

Reporting on its assignment to prepare abstracts of flood-control acts and outline the procedure under them, the committee stated that Congress had taken no final action on a general flood-control act during the past year. It noted, however, that a committee of the House of Representatives had held hearings on flood-control projects preliminary to the introduction of a bill in Congress encompassing general flood-control work as a possible form of activity for the post-war adjustment period.

* Special Engineer, New York Central

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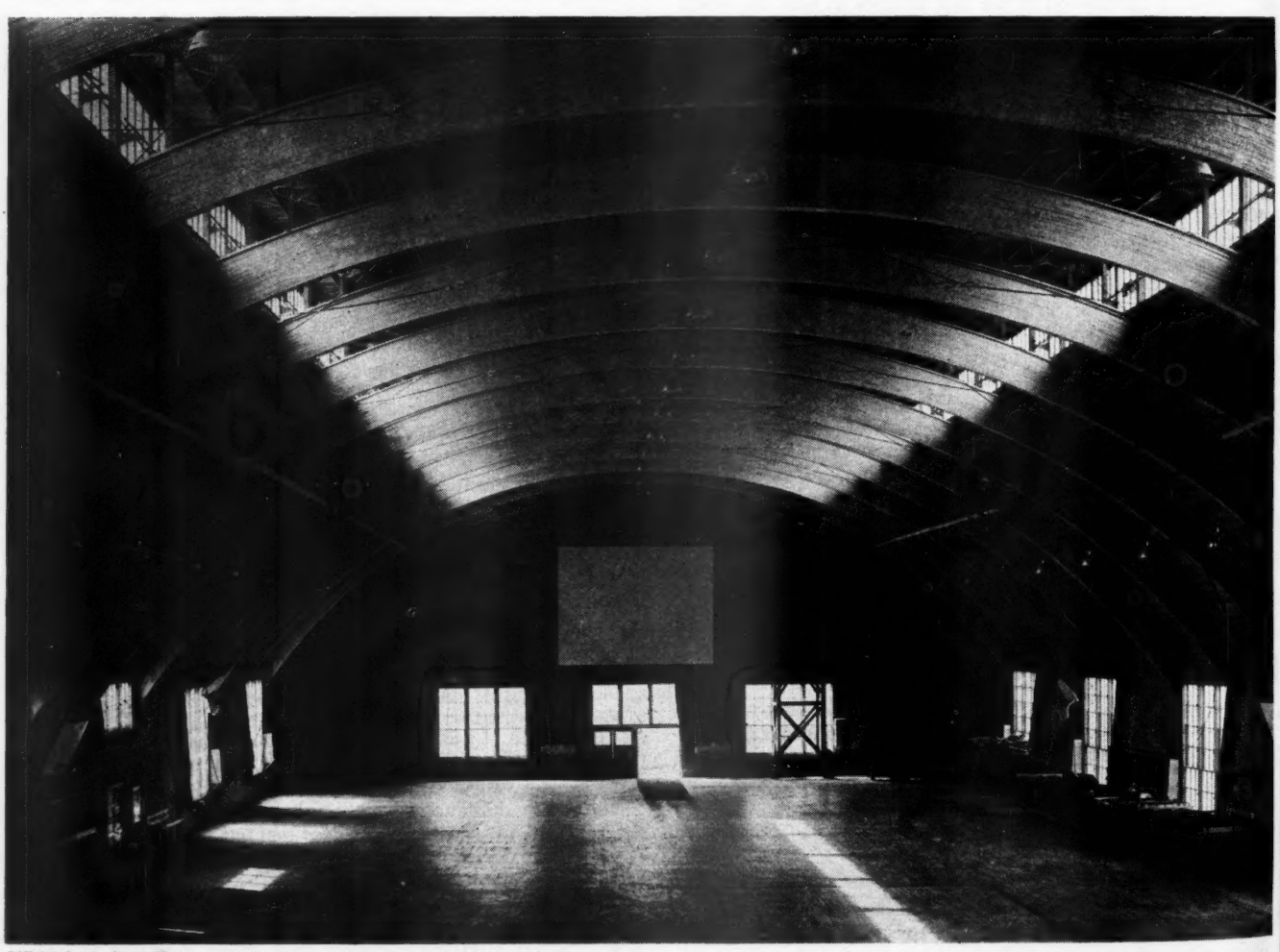

Official U. S. Navy Photo

Laminated Wood Construction of a U. S. Military Drill Hall Points to a Broader Application of Wood Products in Railway Structures in the Post-War Period

B. & O. Sifts Its Postwar Prospects

A special full-time research group devotes main inquiry to traffic outlook and various means of optimizing it

By D. C. Turnbull, Jr.

Executive Assistant, Baltimore & Ohio

INDUSTRY is hard at work today doing two important things. First, it is making an indispensable contribution to winning the war in the shortest possible time and, second, it is diligently striving to perfect workable plans to be used in the post-war period.

It is well known that the railroads are rendering an important and essential service and that they continue to carry record loads of troops, vital war materials, machinery, and supplies. There are no innings which show up in the railroad box score, "No hits and no runs"—rather they are serving the backbone transportation needs of a warring nation, which is busily engaged in accomplishing an unbelievable war production job.

Regardless of this activity many of the railroads, including the Baltimore & Ohio, are making post-war plans. They are conscious of changing conditions and that competition at the end of the war will present new and different problems.

To Know What's Coming and Be Ready for It

The railroads accept the challenge of the future with the same pioneering spirit which gave America the greatest transportation system in the world. Their future is so closely interwoven with that of the nation that, so far as we know, we can only be successful in winning future wars by including an adequate and well-maintained rail transportation system in our national equipment. Of course, the railroads have a prime purpose as a servant of peacetime industry which goes far beyond their usefulness in the time of war. Further, they long ago have learned that they cannot base their future welfare on present public gratitude for a job well done; hence, the pioneering spirit flares anew as the entire industry looks beyond the war period to the challenge of tomorrow.

The railroad industry will not call it a day after taking the long look ahead. They will not only observe trends and changes and the types and the extent of future competition, but will also endeavor to plan wisely, and then act courageously to put their plans in motion. Each railroad is tackling the problem in a manner considered best suited by it to achieve the desired results. The Association of American Railroads, through its post-war committees and research organization, is supplementing the work being done by the individual railroads and is rendering effective service to the entire industry.

Some time ago President R. B. White of the Baltimore & Ohio appointed a committee, known as the Post-War Traffic Development Committee, to engage in post-war planning. This committee, comprising seven members, is constituted so as not to be hampered nor influenced by prejudice or tradition in independently considering the various phases of its work. The members have been chosen largely because they are of the "self-starter" type and also for their ability to maintain open minds. They have few preconceived ideas and are classified among the younger men of the industry.

To maintain the "open mind" policy, as well as to incorporate an "outside viewpoint," the chairman heading this group is a newcomer to the railroad field. He and his committee develop and study appropriate subjects of importance to the company. Informative data are submitted in report form to the president with the conclusions and recommendations of the committee. A number of subjects have been assigned the committee and major emphasis at present is being placed on the following:

1. Traffic Development
   - (a) Freight—including L.c.l.
   - (b) Passenger
   - (c) Relations between rail and other transportation agencies
2. New equipment and materials

The Author

Douglas C. Turnbull, Jr., has been with the Baltimore & Ohio since September, 1943, having entered railroading from the public utility field. Born in Baltimore in 1904, he was graduated from Baltimore Polytechnic Institute in 1921 and in mechanical engineering from Johns Hopkins in 1924; having also had academic training in banking and public speaking.

Entering the service of the Consolidated Gas & Electric Co. in 1925 in the engineering department, he later made economic studies for the new business department. At the time he left utilities for railroading, he was his company's public relations manager. On the B. & O. he reports directly to President White.

3. Influence on traffic of manufacturing changes and new products
4. New training technique and methods, job evaluation, personnel, public and industrial relations

In view of the time required to handle such a program, effort will be directed toward the development of the subjects from a broad viewpoint, with emphasis being placed on ways and methods to render better service to the public. In the period since the organization of the committee, good progress has been made, and, with the committee members busily engaged on specific assignments, even more rapid advancement will be made during the next six months.

The Post-War Traffic Development Committee is a clearing-house for pertinent ideas, operating in an unusual manner, in that it functions separate and apart from the regular organization and exercises no authority over any department. The activities of the Post-War Committee in no way relieve any department of its responsibilities for the handling of its routine duties nor for making future plans in connection with its regular work. Without question, the committee will supplement the work of the company's various departments with its broad, fresh, and independent approach to the newer problems. Its reports, on occasion, may challenge and may not always agree with the present viewpoint but, nevertheless, will receive most careful consideration to the end that sounder policy decisions should evolve and benefit the company in the future.

The underlying plan in the formation of the committee is to maintain a limited membership, closely knit and organized to give intensive study on a full time basis to the important subjects that make up its program. Whenever exhaustive research is necessary on any subject, necessitating the compilation of a great amount of data, additional competent help will be engaged for the purpose.

It is, of course, not believed that such a committee can formulate infallible rules to guarantee post-war progress and prosperity to the railroad. Rather, it is hoped that the committee will furnish constructive recommendations and suggestions of merit, as well as some thought-provoking opinions that will assist in the formulation of aggressive and progressive future plans.

No Man "Indispensable" in a Democracy

We are strangely blind to what is going on at home, while we think we are fighting to defend "democracy." The truth is that our own political order which we suppose to be the purest form of democracy begins to show signs of developing a process of degradation. . . .

In a democratic order such as our own there is no place for an "indispensable man"; the very concepts are antithetical. The essence of the democratic idea is opposition to power permanently lodged in any man's hands.

The Roman Republic throughout its long career clearly saw that fact and rigidly guarded itself against it. Only when it had sickened within itself did it relax that rule. It took but a few short years to transmute Napoleon to First Consul and to Emperor a century and a half ago and his nephew half a century later.

We had our own tradition of "no third term" up to four years ago and we broke it. That was an ominous sign. Today we are discussing a "fourth term" in quite a different mood; we did not talk openly of the "indispensable" man four years ago as we do today. The "indispensable man" is merely the long shadow of the coming Fuehrer, as is the "Popular Front" the long shadow of the coming single-party State.

—Thomas F. Woodlock in the Wall Street Journal.

Communication . . .

Advertising for Employees

CHICAGO, ILL.

TO THE EDITOR:

We of the Railroad Retirement Board read with great interest your timely article "Railways Advertise Effectively" in the November 20 issue of *Railway Age*. Such advertising as you describe not only has been of great value to the railroads in promoting a better understanding, on the part of the public, of the importance of the railroads in the war effort, but also has been helpful to the Board's Employment Service in attracting manpower.

An even more direct attempt to interest people in railroad employment has been made in the advertising of several railroads—an attempt which is to some extent a distinct innovation in railroad advertising and one perhaps also worth publicizing because of the beneficial results already flowing from it in the form of increased placements by the Board's Employment Service. It is the inclusion in "institutional" advertising of a statement concerning manpower needs in which interested individuals are requested to report either to the nearest railroad representative or to the nearest office of the Railroad Retirement Board Employment Service. Perhaps the most striking examples of such advertising that have come to our attention are the New York Central's "Winter Offensive Ahead" and "There Is No Short Cut," prepared mainly for newspaper use.

Many other railroad employers, among which are the Union Pacific, Santa Fe, Rock Island, Burlington, New Haven, Northern Pacific, Great Northern, Wabash, Pullman, and Railway Express, are advertising more directly for workers through such media as radio spot announcements, newspapers, billboards, placards, posters, and handbills. Some of this advertising is linked with institutional advertising and some of it is not, but a great deal of it refers interested persons to the Railroad Retirement Board Employment Service.

In its effort to recruit needed manpower for the railroad industry, the Railroad Retirement Board Employment Service has been able to adapt railroad institutional advertising to a direct appeal for workers. For instance, a very effective color poster of the Board entitled "Enlist—in the Troops of Industry," which illustrates the close relationship of the railroads to the war effort, was adapted from an institutional advertisement "Enlisted in the Troops of Industry" developed by the Union Pacific. Similar adaptations have also been made from advertising prepared for the Santa Fe, the Baltimore and Ohio, and the A. A. R.

Railroads may also find that such adaptations of their own of institutional advertising may prove helpful in attracting manpower. At least the shortage of railroad workers is serious enough to warrant consideration of this means of interesting persons in railroad employment even if the direct results may be slight. As revealed in the Board's October issue of "Personnel Needs and Surpluses" and reported in the *Railway Age* for November 13, there were 116,000 vacant positions in the industry. The publicity given to the excellent job being done by the railroad industry in the war effort has according to our experience persuaded some people to believe that the railroads have, to a large extent, solved their manpower problems. Mention in advertising of the critical need for workers would tend to destroy this false belief.

Direction of interested applicants to the Board's Employment Service may be made in such a way that railroads will be assured that all persons who respond to the advertising are referred on orders of that particular employer, either by urging interested persons to mention the ad, bringing it in with them, or by instructing them to mention the name of the railroad.

If the noticeable trend toward greater and more effective utilization of advertising for manpower needs and a fuller use of the services available through the Railroad Retirement Board Employment Service can be brought to the attention of your readers through publishing this communication, it may be of service to the railroads and will certainly be of great help to the Railroad Retirement Board Employment Service in its recruitment program.

ROBERT H. LAMOTTE.
Executive Officer, Railroad Retirement Board

Railroads-in-War News

Says Roads Can Use Radio to Advantage

F.C.C. Chairman Fly Cites Possibilities in letter to Senator Wheeler

Chairman Fly of the Federal Communications Commission sees many possibilities for the use of radio in railroad communications, and he is hopeful that a discussion of the matter can be arranged between the F. C. C. and the Interstate Commerce Commission. He has so advised Chairman Wheeler of the Senate committee on interstate commerce in response to Mr. Wheeler's recent letter suggesting such a joint study.

A copy of the Wheeler letter, which was noted in the *Railway Age* of February 26, page 435, went to Chairman Patterson of the I. C. C. who has also replied. In his brief response Mr. Patterson pointed out that there have been a number of experimental installations of systems which provide means of communication between the front and rear ends of trains, between one train and another, and between yard offices and engines in switching service.

Will Inspect P. R. R. Experiment—The I. C. C. chairman went on to refer to the article describing the Pennsylvania's installation between Trenton, N. J., and Phillipsburg, which appeared in the *Railway Age* of February 12, page 352. This, he said, will be inspected by the commission in the near future. Meanwhile, Mr. Patterson also assured the senator, the commission has been keeping in touch with all developments along this line, and will continue to do so.

Data thus far available within the F. C. C., Mr. Fly said, were presented to the Senate subcommittee on war mobilization (the so-called Kilgore committee) in executive session on February 12 by Commissioner (then chief engineer) E. K. Jett. As Mr. Fly put it, Mr. Jett there traced the history of experimental uses of radio by railroads, pointing out how the F. C. C. has encouraged such use by granting many experimental applications to permit tests. Also, that F. C. C. is now collaborating with the Radio Technical Planning Board, on which the railroads are represented, in connection with post-war radio planning.

May Give Wave Bands to RRs—Through this board, Mr. Jett is further reported to have suggested, it should be possible to coordinate the railroad industry's post-war requirements for radio frequencies with those of such other services as aviation, marine, police, power companies, etc.; and that F. C. C. would be glad to provide radio frequencies for railroad requirements when the needs of all services have been reviewed by R. T. P. B. and the government. Finally, it was Mr. Jett's idea that any plan for railroad installations should be integrated for the country as a whole, rather than for the benefit of one or a few railroads.

Meanwhile, there are several prospects for study which appear "especially hopeful" to Mr. Fly. He suggested that increased safety might result from radio-controlled block signal systems; that radio might be used in flagging to lay down a warning signal or beam in each direction when trains are stopped under conditions which may result in collision; and that the lack of head-end to rear-end communication might well be looked into, especially where long trains are being operated in reverse.

Discussing other possible advantages of radio, Mr. Fly said that signals can give only a few indications whereas radio has "an unlimited vocabulary;" also, that radio affords two-way communication, and it has a flexibility that signals lack. The successful use of radio on tanks, he added, suggests that objections that the equipment is too delicate for railroad use is rebuttable.

Port Permit Order Revised

In order to clarify certain modifications in the provisions of its order concerning shipments under permit into United States ports for offshore movement to points outside continental United States, the Office of Defense Transportation has issued General Order ODT 16A, effective March 15, which not only supersedes General Order 16, but also incorporates General Order 38A, applying to certain movements to or through Canada.

Under the terms of the new order, permit requirements continue in effect for the following movements: (1) carload and truckload shipments of overseas freight to or within certain port areas in the United States, either for storage or for delivery to ocean carriers; (2) certain carload or truckload shipments of export freight from United States origins to or through Canada; and (3) carload or truckload shipments of domestic or import freight to and within specified port areas in the United States for storage in a public warehouse for government account.

The new order establishes certain changes in procedure, the O. D. T. pointed out. These include: (1) a provision that any permit covering movements affected by this order is valid only by the routes named in the permit; (2) with exceptions, both shippers and carriers are subject to the requirements of the order; (3) permits for l. c. l. or l. t. l. shipments to other American republics" are no longer required; and (4) permits are required for shipments delivered to a ship by other than common carriers.

U. S. Needs Policy On Transportation

Dissimilar treatment leading toward socialism, Conn warns Wichita

Unless the transportation problem is lifted out of the realm of conflicting self-interests within the industry and resolved from the standpoint of what is best for the shipper and private investor, government ownership and political control will be inevitable in the postwar period, according to Donald D. Conn, executive vice-president of the Transportation Association of America, in an address at the annual dinner of the Wichita Traffic Club and Chamber of Commerce on March 16.

"About 20 per cent of the peace-time invested capital of this country is in transportation," Mr. Conn stated. If, through public neglect, political assault or financial default, an already entrenched bureaucracy gains control or ownership of transportation, nothing can save this country from state socialism.

Public vs. Private Investment—"For 25 years legislation has dealt with each separate mode of transport without consideration of the services and financial position of competing facilities. As a result the public has paid for excesses and wastes, and private investors have been denied a fair return upon their savings. Unless postwar transportation policy is resolved in the interests of shippers and consumers on the one hand and the private investors on the other, there is scant opportunity for preserving private ownership in the common-carrier industry.

Postwar policy must also furnish an adequate answer as to whether government expenditures on the public domain will supplement or compete with private capital invested in railroad roadbeds.

"The Transportation Association of America has suggested the principles of a long-term transportation policy which will preserve private ownership. Only one other recommendation is before the public for consideration: that of the National Resources Planning Board,—a policy which would lead straight to government ownership.

"This problem should be considered as a foremost postwar issue by the leaders in every community. It should be discussed and debated always with the primary objective in view—the preservation of the common-carrier industry as a whole in private ownership."

Something to Think About—Mr. Conn submitted the following basic subjects for consideration by all farm, trade

and civic organizations throughout the country:

"1. How can equality be obtained with respect to competitive common carriers when three modes of transportation use the public domain while the railroads operate on privately-owned roadbeds?

"2. Are the declarations of Congressional policy, as set forth in the various statutes (such as the Interstate Commerce Act, the Civil Aeronautics Act, and the Hoch-Smith Resolution) in conflict with one another? Should any additional basic principles be considered in order that suitable protection will be afforded the invested savings of the public?

"3. Would the realization of suitable and complete regulation solve the transportation problem without a correction of the present economic dislocations within the industry?

"4. Should public policy treat separately with domestic common carriers, or should this problem be considered in the light of international transportation?

"5. Should the responsibility for the legislative treatment of the domestic common-carrier problem be divided among several committees or centralized in one committee of Congress?

"6. By what means can there be accomplished a better co-ordination between the services rendered by the several types of carriers?

"7. How can a fair and non-discriminatory rate structure for regulated transportation be so applied as to afford a reasonable opportunity for all essential public carriers operating in the same general territory to obtain a fair return?

"8. Should not the government entirely abandon the land grant privileges under which it obtains preference in rates for transportation services furnished by common carriers?

"9. Should governmental commercial operation of the actual facilities of transportation, such as barge lines, be continued?

"10. Is there as present or can there be expected in the immediate future sufficient private capital available for necessary rehabilitation and modernization of transportation facilities and how can such expenditures be best provided for in addition to the available private capital?

"11. Should steps be taken to expedite or facilitate consolidation of transportation facilities into a limited number of systems, and if so, what methods can be suggested to accomplish it?"

Californians' "Don't Come Now" Publicity Wins Praise

Reiterating his advice to "all organizations still intending to hold conventions," a "don't-do-it" statement quoting Director Eastman was released by the Office of Defense Transportation March 12, in praise of efforts of certain California groups to discourage non-essential travel to that region during the war.

Pointing out that the San Francisco Chamber of Commerce had issued a bulletin recommending that group meetings not be held in that city, due to local housing difficulties, and that "Californians, Inc.," a travel promotion organization, was sponsoring "Don't Come to San Francisco Now" advertisements, the O. D. T. press release quoted Mr. Eastman as saying: "The action of San Francisco reflects a realistic and forthright attitude toward the West coast travel and hotel situation. If the civic leaders in other cities where conditions are comparable would be equally courageous in their attitude concerning visitors and conventions during the present emergency, it would strengthen the war effort."

Limit Occupational Deferments of Men Under 26

Major General Lewis B. Hershey, Director of Selective Service, stated on March 14 that thereafter no registrant aged 18 through 25 may be considered as a necessary man for occupational deferment unless the state director of the state in which he is employed recommends his occupational deferment. The only other exception for such registrants will be if they are engaged in an activity specifically excepted by the Director of Selective Service from the new policy.

Since February 1 this same procedure has been applied to registrants 18 to 22 years of age. Under this procedure, General Hershey said, state directors are expected to recommend deferments of individual registrants under 26 years of age without whose services the production requirements of critical industry cannot be met. The making available for induction of registrants under 26 years of age will permit deferment of registrants 26 years of age and over in critical industries with progressive consideration for their relative irreplaceability and increase in age, he explained.

Finds Some Manpower Wastes Remaining on Railroads

Although "substantial progress" has been made, "much remains to be done" by railroad managements, organized labor, and shippers in the way of modifying or discontinuing practices "which have the effect of wasting manpower." So says the review of the railroad conditions which appears in the latest issue of the Bureau of Agricultural Economics' "Marketing and Transportation Situation."

Giving examples of what he had in mind, the author of the review had this to say: "The railroads, for instance, have yet to make effective their reported plans for short-routing empty cars returning to their owners. Until this is done, manpower will be wasted in such unproductive service. The failure on the part of the shippers to clean cars after unloading and to properly mark packages shipped in less-than-carload lots still results in much waste of rail manpower. And organized labor, for its part, still has to decide what further contributions to increased efficiency it can make through the modification of working rules which waste manpower."

Northwest Wheat Situation

Recent Office of Defense Transportation investigations of the situation with respect to the movement of wheat out of the Northwest indicate that the present rate of shipment will clear the elevators by the time the 1944 crop is harvested. The investigation showed that in North Dakota no wheat has been stored in piles on the ground in the last 60 days, and grain was being moved out at the rate of a million bushels a day.

Meanwhile, the number of United States grain cars going into Canada was restored to the 200-a-day basis this week with the expiration of the 30-day period during which the War Food Administration agreed that only 100 cars would be sufficient. The cars are going into the Dominion to bring out 40,000,000 bushels of grain purchased there by W. F. A., a diversion which aroused senators from the Northwest who were hearing from home about blocked elevators and car shortages in this country. Also, the Car Service Division has canceled Special Car Order No. 46 which had required expedited return of box cars of Western ownership to relieve grain-car shortages.

Roosevelt Still Wants the St. Lawrence Seaway

President Roosevelt is "convinced that the time has come for a non-partisan effort to secure Congressional authorization for the St. Lawrence development in the near future in order that the project may be available for early post-war construction." He has so advised Senator Aiken, Republican of Vermont, sponsor of a pending bill (S. 1385) to provide for Congressional approval of the St. Lawrence agreement with Canada.

The advice came in a March 3 letter made public last week by Mr. Aiken. "The undertaking," the President also said, "will offer such important benefits to many states that I am sure it will provide a desirable stimulus to industrial and business activity which will assist the entire country in its reconversion to a stable peace-time economy on a continued high-production level. Many competent studies have shown that it will not hurt the railroads or ports through which foreign commerce now flows but will ultimately increase their business.

"I am advising interested federal agencies that your bill, modified to provide for construction as a post-war project, has my approval. I have appreciated your consistent support of this great undertaking."

Stranded Florida Vacationers Scorn Coach Seats

Part of the special coach service for emergency northbound travel out of Florida which was authorized by the Office of Defense Transportation for the month of March already has been discontinued for lack of patronage, the O. D. T. announced March 14.

As noted in *Railway Age* of March 4, page 466, the O. D. T. authorized the operation of two daily coach trains in this service in response to urgent representations that thousands of travelers were stranded in Florida. The Florida East Coast and Atlantic Coast Line jointly put one such daily train into operation, while the Seaboard Air Line added the additional coaches thus made available to its regular trains. After operating these specially provided coaches for several days with scant patronage, the Seaboard discontinued them, informing the O. D. T. that "Apparently we have taken out all the people who want this type of accommodation."

While the special train on the F. E. C.-A. C. L. was still in operation when this O. D. T. statement was released, it was said then currently to be carrying only about 400 passengers a day, and its discontinuance before the end of the authorized 30-day period was anticipated. At the same time the demand for Pullman accommodations and coach space on regular Florida trains continues as heavy as ever, and reservations are still booked 30 days in advance, the limit under regulations presently effective, according to the O. D. T.

It was emphasized that no additional Pullman cars can be assigned to the Florida service, and the all-Pullman specials which before the war run northward in as many as seven sections at this time of year are "out for the duration," the O. D. T. said further.

Lifts Restrictions on Lake Coal Traffic

To permit the unrestricted movement of coal on the Great Lakes until the seasonal iron ore movement gets under way, the Office of Defense Transportation announced March 3 that it had suspended until May 15 all limitations on coal movements on the lakes.

Because of what were described as the most favorable ice conditions in years on the lakes, a result of the absence of any sustained sub-zero temperatures, an early opening of the navigation season is expected, in contrast to the unfavorable situation last year.

Asks $18,811,000 for O. D. T. in Fiscal 1945

President Roosevelt last week sent to Congress a Bureau of the Budget estimate calling for an appropriation of $18,811,000 for the Office of Defense Transportation for the fiscal year ended June 30, 1945. This would be an increase of $4,161,000 above the $14,650,000 appropriated for the current fiscal year ending next June 30.

According to an accompanying letter from Harold D. Smith, director of the Bureau of the Budget, the estimate provides "for a continuation of the agency's present activities and for an expanded program to meet the increasingly critical situation in the field of motor transport."

Commends "Philadelphia Plan" to Curtail Conventions

The Office of Defense Transportation disclosed March 12 that it has urged various hotel and travel organizations, including the American Hotel Association and the International Association of Convention Bureaus, to adopt a plan put into effect by the Philadelphia, Pa., Convention and Tourist Bureau for the purpose of eliminating all conventions not directly related to the war effort.

The provisions of this "Philadelphia plan" are as follows: (1) Solicitation of convention business by the city convention bureau is to be discontinued for the duration, except for post-war meetings or for those that qualify under the O. D. T. specifications as essential to the war; (2) representatives or officers of the convention bureau will not visit meetings or conventions being held during wartime except upon specific request; (3) when requested to meet with organizations holding wartime conventions, these representatives will endeavor to discourage holding large gatherings while the war lasts; (4) advertising and publicity will be confined to promoting post-war conventions or those that qualify under O. D. T. definitions of wartime essentiality; (5) meetings that do qualify as essential under war conditions will receive the "utmost co-operation" of the convention bureau; (6) arrangements will be made with local hotels not to accept reservations for convention space or delegates more than 30 days in advance of the date thereof; and (7) upon acceptance of reservations by hotels, the O. D. T. will be furnished such information about them as it requires.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since March 7, and which are of interest to railways:

Copper Scrap—The requirement for reporting the generation or accumulation of more than 5,000 lb. of copper and copper-base alloy scrap has been eased to require reporting only more than 50,000 lb. Companies which generate or accumulate less than 50,000 lb. are no longer required to file WPB form-452 although they must continue to comply with the provisions of Copper Order M-9 requiring the disposal of all scrap in excess of a 30 days' accumulation unless such accumulation aggregates less than 10,000 lb.

Hand Tools—Simplification order L-157 has been amended to allow the use of alloy steel in place of carbon steel, if desired, for the following items:

Schedule I: hand shovels, spades, scoops and telegraph spoons.
Schedule II: forged axes, hatchets, broad axes, adzes, and light hammers.
Schedule IV: heavy forged hand tools.
Schedule V: hand forks, hooks, rakes, hoes, eyes hoes, and cultivators.

Machine Tools—Provisions of the recently amended PR 13, as they apply to the sale of idle and excess stocks of machine tools, have been clarified by the Tools division. The rules governing "special sales" of idle and excess materials have been broadened in the regulation to include finished products, including machine tools. "Special sales" include sales of products by a person who does not sell them in the regular course of his business. List B of PR 13 now provides that such special sales of machine tools may be made without any priority rating or allocation.

Heretofore, machine tools which have been put into actual use have been obtainable on unrated purchase orders. However, new machine tools which have been delivered to a customer, but which he did not put into use, because of reduction or cancellation of contracts or for other reasons, have been subject to the restrictions of PR 1. That regulation provides that property acquired with a preference rating, but not used for the purpose for which the preference assistance was granted, could only be sold to persons, and in ways specified by WPB.

The addition of machine tools to List B of PR 13 with the symbol "WOP" (without priorities) now frees such delivered but unused machine tools from the restrictions of PR 1. Sales of new machine tools by producers continue to be governed by GPO E-1-b (Machine Tools). No change in PO E-4 (Second Hand Machine Tools) is contemplated, the Tools division said. The mechanism established by that order will still be used where it is desired to allocate to a particular buyer a specific used machine tool offered for sale. The term "machine tools" as used in PR 13 means all machines (except portable machine tools) for the cutting (except heat cutting), abrading, shaping, forming, straightening and forcing of metals.

Repair Parts for Construction Equipment—The WPB has eased restrictions on the purchase of repair parts for construction machinery and equipment by the amendment of L-192. Parts for current use may now be purchased by certification by the purchaser instead of through application for WPB authorization, with the exception of purchase orders of more than $1,000 for parts for shovels, cranes, and draglines of less than 2½ cu. yds. capacity. Such purchase orders are subject to WPB authorization. Approximately 85 per cent of all new construction equipment is needed to fill military requirements, the WPB Construction Machinery division said. This means that used equipment must take care of civilian needs. Shovels, cranes, and draglines are the most critical items covered by L-192, which controls the production and distribution of specified types of construction equipment. The authorization required for repair parts' purchase orders of more than $1,000 is designed to conserve parts for the most essential uses. Certification of purchase orders in all other cases is in substantially the following form: "Authorized under L-192—current use." This certification means that the repair parts ordered are required to replace worn out parts within 30 days after receipt and are not for stock; that the purchaser does not have other parts on hand or on order for this purpose; and that he has complied with the provisions of L-196.

Shellac—Because the outlook for increased imports of shellac now appears brighter than at any time during the last two years, the WPB is planning to amend allocation order M-106 to make some of the higher grades of shellac available for civilian uses, and plans are being made for easing present restrictions on inventories. The contemplated amendment also will eliminate large amounts of paper work, WPB said.

Zinc Products—The WPB has provided for the restoration of the use of zinc in the manufacture of many finished products, in line with the general policy of the board to permit the use of scarce materials if the result is to conserve material in greater demand, effect a saving in man-hours, or enable the manufacture of a better product. The restoration was effected by amending Conservation Order M-11-b to add a number of items to the list of exceptions to the limitations imposed by the order, as follows: coal stokers, domestic electric ranges, dry cell batteries and portable electric lights, electric fans, mechanical pencils, motorized fire apparatus, protective coating or plating of zinc on loose leaf metal parts and units. There will be no general increase in the output of the finished products involved, nor will there be any relaxation in the restrictions on the manufacture of the products, WPB said. End product volume and other restrictions on manufacture still remain under the controls set up by the many "L" orders under which they are produced.

Prices

Bituminous Coal—When new ceiling price schedules recently were issued for three bituminous coal producing districts, under amendment No. 91 to MPR 120 (Bituminous Coal Delivered From Mine or Preparation Plant) effective March 16, they automatically revoked certain individual adjustments made before the new schedules were issued. The adjustments revoked were:

1. Any individual adjustments made before the schedules became effective except where specific provision was made in the new schedules for the earlier adjustments. These exceptions were made in the schedules for mines which could not cover production costs at the regular listed ceilings.

2. All temporary adjustments made under the method provided on December 3, 1943, for high-cost mines. Under this method, producers could make quick ceiling price adjustments when increased labor costs resulting from the November 3, 1943, Ickes-Lewis wage agreement were causing their mines to operate at a loss. These earlier adjustments are voided as of the effective dates of the new district schedules, namely, January 28, 1944, for District No. 9, Western Kentucky, and February 3, 1944, for District No. 2, Western Pennsylvania, and District No. 13, Alabama and parts of Georgia and Tennessee.

GENERAL NEWS

Brakemen Awarded Medals of Honor

A.C.L. and I.C. employees each rescued a child from path of approaching train

An Atlantic Coast Line brakeman, Craig F. Fields of Florence, S. C., and an Illinois Central brakeman, George W. Lindsey of Waterloo, Iowa, have been awarded bronze medals of honor by President Roosevelt upon recommendation of the Committee on Award of Medals of Honor, as approved by the Interstate Commerce Commission, under the 1905 law which provides for such medals for outstanding feats of bravery connected with saving life upon the railroads.

The acts which brought these awards are described in a commission notice released March 7. The award to brakeman Fields was based upon his rescue of a 9-year-old boy from the path of moving cars being switched by a locomotive over a highway grade crossing on the line of the A. C. L. at Mayesville, S. C. This occurred on August 5, 1943, at about 2:50 p. m. An engine with three cars attached was standing about 4 car lengths south of the crossing, preparatory to switching one car to a siding to the north of it.

Pushes Boy From Tracks—The conductor, located about 30 ft. south of the crossing, had given the engineer a "kick" signal, and was preparing to cut off the car to be switched as it passed him. The cars were being pushed toward the crossing at a speed estimated between 10 and 15 m.p.h. when a boy riding a bicycle approached the crossing. Warnings shouted by the conductor and brakeman confused the boy and he stopped on the track in the path of the approaching cars, which were then only a few yards away.

While the conductor was giving an emergency stop signal, brakeman Fields, who was standing at the side of the track near the crossing, dashed onto the track, grasped the boy and the bicycle, and pushed them to safety. No one was hurt, though the leading car brushed the brakeman's shoulder and continued from one to three car lengths beyond before coming to a stop.

The award to brakeman Lindsey also was based upon the rescue of a child, in this case a boy three years of age, from the path of a moving freight train. This act occurred on the line of the Illinois Central at Waterloo, Iowa, about 1:28 p. m. on July 30, 1943.

A Rescue from the Pilot—A train consisting of a locomotive and 60 cars, departing from the Waterloo yard, had traveled about 1,660 ft. and obtained a speed of 8 or 10 m.p.h. when the brakeman from his position on the seat on the left side of the locomotive cab saw a child playing on the ties about 125 ft. ahead, and apparently unaware of the approach of the train. Brakeman Lindsey rushed from the cab along the running board beside the boiler, descended via the pilot beam to the pilot sill step, and lifted the child from the path of the engine. Still grasping the child, he fell forward and rolled clear of the train.

After the engine and one car had passed them, brakeman Lindsey released the child, ran ahead, and boarded the engine again. Neither he nor the child was injured.

These two awards increase to fifty the number of medals of this character that have been bestowed for acts of bravery in saving life on the railroads since the passage of the Medals of Honor Act in 1905.

Great Lakes Advisory Board to Meet March 22

The "job ahead" for the railroads and the shippers will be chief topic for discussion at the 21st annual meeting of the Great Lakes Regional Advisory Board, March 22, in the Commodore Perry Hotel, Toledo, Ohio. R. V. Fletcher, vice-president of the Association of American Railroads, will be the principal speaker. Others will include: Robert J. Bowman, president, Pere Marquette; John S. Worley, professor of transportation engineering, University of Michigan; C. R. Megee, manager, Open Top section, A. A. R.; and C. H. Dietrich, executive vice-chairman, Freight Claim division, A. A. R.

There will be annual election of officers, presentation of committee reports, and a general analysis of business conditions in the Board territory for the second quarter of the year.

Money for Rivers and Harbors

The Senate on March 9 passed and sent to conference its version of the War Department Civil Functions Appropriation Bill for the fiscal year ended June 30, 1945, which carries $53,044,000 for rivers and harbors work, an increase of $6,244,000 over the amount approved by the House. In addition, the Senate provided for continuation of the War Department's authority for advance planning in order that it may carry on as new authorization bills are enacted, including the pending one which would authorize projects estimated to cost $429,000,000.

The $6,244,000 added by the Senate includes $3,924,000 more than the House allowed for work on the Missouri river and $1,620,000 more for the Corpus Christi-Port Isabel section of the Gulf Intracoastal Waterway. Meanwhile, the Senate left in the bill that provision which repeals $700,000 of the unobligated balances from previous rivers and harbors appropriations.

Head Surveys Air Cargo Prospects

Says customers want present service, integrated with rail, continued

Noting a lively public interest in the future of air transportation of cargo—and the fact that current writing and discussion is often the product of "theorists' rather than of informed transportation men, L. O. Head, president of the Railway Express Agency, has issued a statement on the outlook for this development, based on the Agency's rich experience in the field. Mr. Head believes that the future of air transportation in the carriage of goods "must be largely a matter of conjecture until the war ends." He notes great wartime technological development in aircraft, and the rapid growth of cargo transportation, but, he observes, these are not common carrier operations; and what postwar operating costs will be cannot now be accurately determined, nor can all the traffic be identified which might move at rates higher than those of surface transport.

"Railway Express," he went on to say, "is the one organization, which for years has been and is now conducting the air express business on all of the nation's airlines. We have also materially aided in the development of international air express service. We have an Air Express Division officered by men of wide transportation experience, who for more than 16 years have been engaged in the development, handling and publicizing of Air Express. This experience makes their opinions especially valuable.

Every Town Has Air Service—"As early as 1919, the express organization became actively interested in the possibilities of commercial air transport and experimented with it. But it was not until 1927, when regularly scheduled air service across the nation was inaugurated, that air express service could be established. From the beginning with only a few airport cities, Air Express was made available to all of our customers throughout the country. Thus a shipment could be forwarded under a single express receipt between any two points in the United States providing a fully co-ordinated and integrated air and mail service. As the air industry expanded, increase in number of operating air companies and service to wider areas, this single responsibility in the handling of air express became of increasing importance to the commercial and industrial life of the nation."

(*Continued on page 578*)

Grade Crossings a Post-War Problem

Judge Fletcher asks Congress to allocate part of road funds for such work

If Congress should determine to appropriate three billion dollars to carry out a post-war program of highway construction, as is provided in H. R. 2426, which bill is now under consideration in the House roads committee, or some other substantial sum, it should provide that a definite proportion be set aside for the elimination of highway-railroad crossings, Judge R. V. Fletcher, vice-president of the Association of American Railroads, told the committee on March 15.

It would not seem unreasonable that 20 per cent of the proposed three billion dollar expenditure for highways be ultimately spent for this specific purpose, he suggested, explaining that a survey undertaken by the A. A. R. grade crossing committee had developed that there are in the United States 6,000 points where crossings should be eliminated by separation of grades, 1,700 points where existing separations need reconstruction, and 8,200 points where signal protection of highway-railroad crossings should be provided. As it has been estimated that each grade separation project would cost, on the average, $100,000, each reconstruction project $76,000, and each signal installation $3,000, then the aggregate cost of the suggested work would be around $865,000,000, Judge Fletcher pointed out.

Doesn't O. K. the Bill—The A. A. R. vice-president remarked at the beginning of his statement to the committee that he was not to be understood as endorsing the general principle that as much as three billion dollars should be appropriated for post-war highway development. "Generally speaking," he added, "the railroads of the country have been insisting upon equality of treatment in the matter of subsidies, that being one of the fundamentals of our political philosophy. I am not asserting that a bill of this character can be classified as a subsidy," he went on to say, "that being a question which should be debated elsewhere.

"The improved system of highways contemplated by the bill would unquestionably be used by the competitors of the railroads," he pointed out, "and to that extent it may be asserted that the adoption of such a bill represents inequality of treatment.

"I appreciate the fact, however, that there is a public demand for improved highways, and the problem is one for Congress as to whether the expenditure authorized by this bill is justified, in the light of the financial condition of the federal treasury. In any event, my appearance here is not for the purpose of engaging in any abstract discussion upon the question of subsidies. On behalf of the railroads," Judge Fletcher declared, "I respectfully reserve the right to present that question, when it arises, in the proper forum."

Who Should Protect Crossings?—Whether the federal government will ultimately assume 75 per cent of the total cost of the highway improvements under consideration, as contemplated in the bill, or some other proportion, the A. A. R. spokesman would not undertake to say. "I am contending, however," he continued, "with confidence in my position, that the cost of protecting highway traffic at railroad grade crossings should be assumed as a part of the public expense, paid for either by the government or by the state, as Congress may conclude."

In recent years, he pointed out, many states have assumed a substantial proportion of the total cost of such projects, recognizing the fact set forth by Justice Brandeis in a Supreme Court decision that "the railroad has ceased to be the prime instrument of danger and the main cause of accidents" at highway grade crossings, and the principle that "the expense should be borne with some relation to benefits."

Milwaukee Starts Radio Programs

The Chicago, Milwaukee, St. Paul & Pacific, on March 12, inaugurated a series of 15-min. radio broadcasts over Station WMAQ, Chicago. The broadcasts will take place at 10:30 a. m. every Sunday, between March 12 and December 3 and will include news and events by Cloyd Head, radio commentator.

Grand Trunk Develops Troop Diner

A dining car for use in troop trains has been completed by the Grand Trunk Western at Port Huron, Mich. The diner, which accommodates 56 at one sitting, is a converted sleeping car. Pantry facilities have been combined with the kitchen, which has a large steam table for quick service. Seats and backs of the benches, which replace chairs, are upholstered with gray-blue leather and the sanitary table tops are covered with black linoleum trimmed with tomato red.

The floor is covered with black linoleum and the sills are tomato red. Seat ends and dado are in taupe with a lighter shade of taupe to the head lining. The ceiling is in cream. A crew of 10 men will operate the diner.

For-Hire Truckers Seek Subsidy

Exploration by the Office of Defense Transportation of the possibility of a government subsidy "to insure the continued operation of trucking companies" has been asked by a committee of for-hire motor carriers. This proposal, to be discussed with O. D. T. officers in detail by a special subcommittee, was one outcome of a recent 6-day conference in Washington, D. C., of this committee and members of the O. D. T. Division of Motor Transport staff.

Describing the present financial condition of some of the motor carriers as "critical," the committee, according to an O. D. T. press release, attributed this situation to "the general rigidity of rates and the steady increase in operating costs caused by over-age equipment, increased wages, increased cost of parts, and deterioration in the quality of parts and fuel."

No Additional Funds for Transport Board

Will have to carry on with Webb, Childe and Goff completing studies

The Board of Investigation and Research created by the Transportation Act of 1940 will wind up its affairs on September 18 in something less than a blaze of glory. With its funds virtually exhausted and its prescribed studies uncompleted, the board has failed to put over a repeat performance of its 1943 feat of persuading Congress to overrrule itself and give it more money in the face of a stipulation to the effect that previous appropriations must suffice to complete the work of the board.

Has Had $1,121,500—Such a stipulation was first included in the appropriation bill which gave the board $500,000 in July, 1942, but the board nevertheless came back and got its current appropriation of $275,000 (with a live stipulation) included in the Independent Offices Appropriation Bill for the fiscal year ended June 30, 1944. This time, however, the stipulation stuck; for the Independent Offices Appropriation bill for the fiscal year ended June 30, 1945, has been reported to the Senate without any appropriation for the board. Since its organization, the board has received appropriations totaling $1,121,500.

As noted in the *Railway Age* of February 26, page 432, it had sought an additional $178,000 to do what it would appraise as an adequate job of completing its studies; but the record of the bill's hearings before a senate appropriations subcommittee shows that Board Chairman Robert E. Webb and Member C. E. Childe got a cool reception and much criticism for their failure to apportion the current appropriation in accordance with the Congressional stipulation. Even Senator McKellar, Democrat of Tennessee and acting chairman of the appropriations committee, was opposed to a further appropriation. And he had been a supporter of the board's appropriations since it followed through from its December, 1941, commitment to him, going outside its statutory assignments to make the interterritorial freight rate study which found discrimination against the South.

Want Still More Time and Money—The hearing's record also reveals that Messrs. Webb and Childe not only wanted the $178,000 to carry on until September 18, but they thought that more time and still more money was necessary "if the board's work is to be carried to a satisfactory completion."

This extension idea was embodied in a letter written by the board to Senator McKellar prior to the hearings. It suggested that the board's life might well be extended for another year—to September 18, 1945—and that $400,000 more be provided for that purpose. There was no discussion of this at the hearings where it soon developed that the board had little chance of getting financial relief for its remaining days, let alone a new lease of life.

Chairman Webb's presentation showed that as of the end of February the board

expected to have $68,000 of which $20,000 would have to be assigned to the payment of accumulated leaves of employees. Thus the balance for operations to September 18 would be $48,000. With no more funds forthcoming, Mr. Webb estimated that by the end of April the board would be scaled down to 12 people. These would include himself, Mr. Childe and Dr. John H. Goff, director of research, and their stenographers, and six other employees. "And," Mr. Webb said, "it will be rather difficult for only three people, Mr. Childe, Dr. Goff, and myself that are really engaged in research, to revise completely these reports and submit them to Congress."

None of Its Duties Done—The board has thus far published none of the three studies specifically assigned to it in the 1940 act. These are the investigations of public aids to carriers, the impact of taxes on carriers, and the relative economy and fitness of the various agencies of transport. The Webb presentation listed the public aids and carrier taxation studies as being "in final stages—will be submitted in spring of 1944."

The several subsidiary studies involved in the investigation of the relative economy and fitness of carriers are in various stages short of completion.

These subsidiary studies include inquiries into practices and procedures of governmental control; trade "barriers" in motor transportation; regulatory policy; labor studies; integration of transportation carriers; passenger, express, and mail traffic; relative costs of rail, motor, and water transportation; adequacy and efficiency of rail, motor, and water carrier operations; carrier accounting and statistics; economics of pipe-line transportation; economics of air transportation; and traffic volume, distribution and flow.

Favors Extra-Curricular Work—Meanwhile, the board has pushed its extra-curricular activities to a conclusion, turning out its summary report on interterritorial freight rates on March 30, 1943, and its complete report on that subject on September 27, 1943. This study cost "in the neighborhood of $80,000," according to Mr. Webb's testimony. When Senator Reed, Republican of Kansas, suggested that it did not develop anything that had not been previously developed, Senator McKellar indicated his feeling that it had not accomplished what he had in mind when he got the board to take on the job. "At any rate, we have not got the rates adjusted," he said.

Coming before the subcommittee to justify the proposed deficiency appropriation of $178,000, Chairman Webb had a prepared statement of which he was permitted to read only a small part before Senator McKellar interrupted to ask: "When the Congress gave you $275,000, Mr. Webb, for the rest of the time, why did you not adjust your plans and forces to finish it up on the $275,000 rather than to ask for a deficiency?"

And that question, which Messrs. Webb and Childe failed to answer to the satisfaction of the senators, became the theme of the session.

"Diligence" But No Results—Mr. Webb said that the board made an attempt to adjust the program; but Senator McKellar saw in its performance an illustration of how "bureaus of the government are just getting so bad that they are undertaking to tell Congress what to do instead of Congress telling them what to do." When the B. I. R chairman tried again, saying the board had made "diligent efforts" to operate in accordance with the Congressional stipulation, Mr. McKellar came back to ask what chance he would have of returning to the Senate if his campaign for re-election had to be based on nothing but the "diligent efforts" he had made.

It was brought out in Mr. Webb's discussion of the board's pending investigations that it had cost the railroads about $1,000,000 to furnish for the so-called waybill study the original bills of lading or waybills representing approximately one million actual movements in 1939. The build-up for the pending investigations did not move Senator McKellar. He reminded Mr. Webb that the committee "entered into a contract with you," adding "so far as I can see, you have paid no more attention to the contract that was entered into than anything."

After Mr. Childe had made argument for his point of view that more money would bring forth better reports, Senator McKellar told the board members that they were "just talking to a man who is not going to be misled a second time." "What you gentlemen owe the committee," he added, "is an abject apology for having violated your word here in an agreement."

Cost Five Times Estimate—Senator Reed then took up the questioning, recalling his own part in the framing of the legislation which set up the board. The highest estimate of the cost of the proposed investigations, he said, was something like $200,000, as compared with the $1,116,000 appropriated for B. I. R. The Kansan questioned the value of the waybill study, and of the general investigation of the relative economy and fitness of carriers. It was his recollection that Congress intended making the study of public aids to carriers the primary assignment of the board. He was thus "horrified" when he learned that the board had "gone off on a tangent here on this relative economy and efficiency and spent some $600,000 to $700,000." Mr. Childe pointed out that the relative economy and fitness investigation was one of the board's specific statutory assignments. Previously, Senator McKellar had made some comment on the public aids study. "We are giving so much public aid now," he said, "that I did not think it was necessary to study it. I did not think that anybody paid any attention to studies on public aids. We just decide to 'shell it out.'"

With respect to a further appropriation for the board, Senator Reed joined Senator McKellar in opposing it. "As a member of this committee," he said, "I refuse to be blackmailed by public agencies we have given directions to and then have them not carry out those directions." Senator Green, Democrat of Rhode Island, protested the use of the work "blackmailed"; he conceded that he knew nothing about the B. I. R. situation, but he hates to see witnesses before the committee "bully-ragged." The hearing's record closed with a reprinting of the letter in support of another $178,000 for the board which had been written to the committee by J. G. Luhrsen, chairman of the Railway Labor Executive Association, as noted in the issue of February 26, page 432.

Consolidated Freight Terminal Advocated for Chicago

A $2,000,000 freight consolidation terminal for Chicago is being advocated by certain trucking interests and freight forwarders for both wartime and postwar operation. Although no definite plans have been formulated, the proposal is being studied by federal and local government planning agencies with a view to expediting the handling of war traffic.

The proposal calls for the handling of inbound and outbound freight carried by railroads, trucks, airlines and waterways through a terminal built on 125 acres of land at Thirty-third street and Ashland avenue. A landing field for helicopters and feeder planes is included in the project.

While the proposal is that of truckers and freight forwarders—coordination with railroads is considered essential. The present Army-Navy consolidating station at 2035 West Pershing Place handles 4,000,000 lb. of railroad and truck freight a day and if it should become inadequate, the transfer of Army-Navy consolidating facilities to the proposed station might be considered.

It is expected that the development will be financed privately. Drawings and plans will be submitted to all city, state and regional agencies for approval before construction plans are worked out, according to an announcement of the Army's Sixth Transportation zone which is studying the plan.

Purchase of Trucks Not Under Acquisition-of-Control Rule

With Commissioner Mahaffie protesting that the ruling will permit a motor carrier to sell all its equipment to another trucker and abandon its operations entirely, the Interstate Commerce Commission, Division 4, has found that the Interstate Commerce Act's section 5(2)(a) does not apply to transactions wherein the transfer of physical property between motor carriers involves nothing to indicate that control over any portion of the seller's operations is intended.

The decision is in No. MC-F-2439.

The majority report representing the view of Commissioners Porter and Miller, grants the petition of the joint applicants—Refiners Transport & Terminal Corporation of Detroit, Mich., and Petroleum Transport, Inc., of Lansing—for dismissal, on lack-of-jurisdiction grounds, of their application for approval of the purchase by Refiners of 20 pieces of motor vehicle equipment from Petroleum for $55,000.

The pertinent clause of section 5(2)(a) stipulates that "It shall be lawful, with the approval and authorization of the commission, . . . for any carrier, or two or more carriers jointly, to purchase, lease, or contract to operate the properties, or any part thereof, of another; . . ." The majority concedes that if read "literally" this clause "might warrant a finding" that the Refiners-Petroleum transaction was covered.

"However," it adds, "in interpreting that clause, the entire section must be read and its purpose and historical development borne

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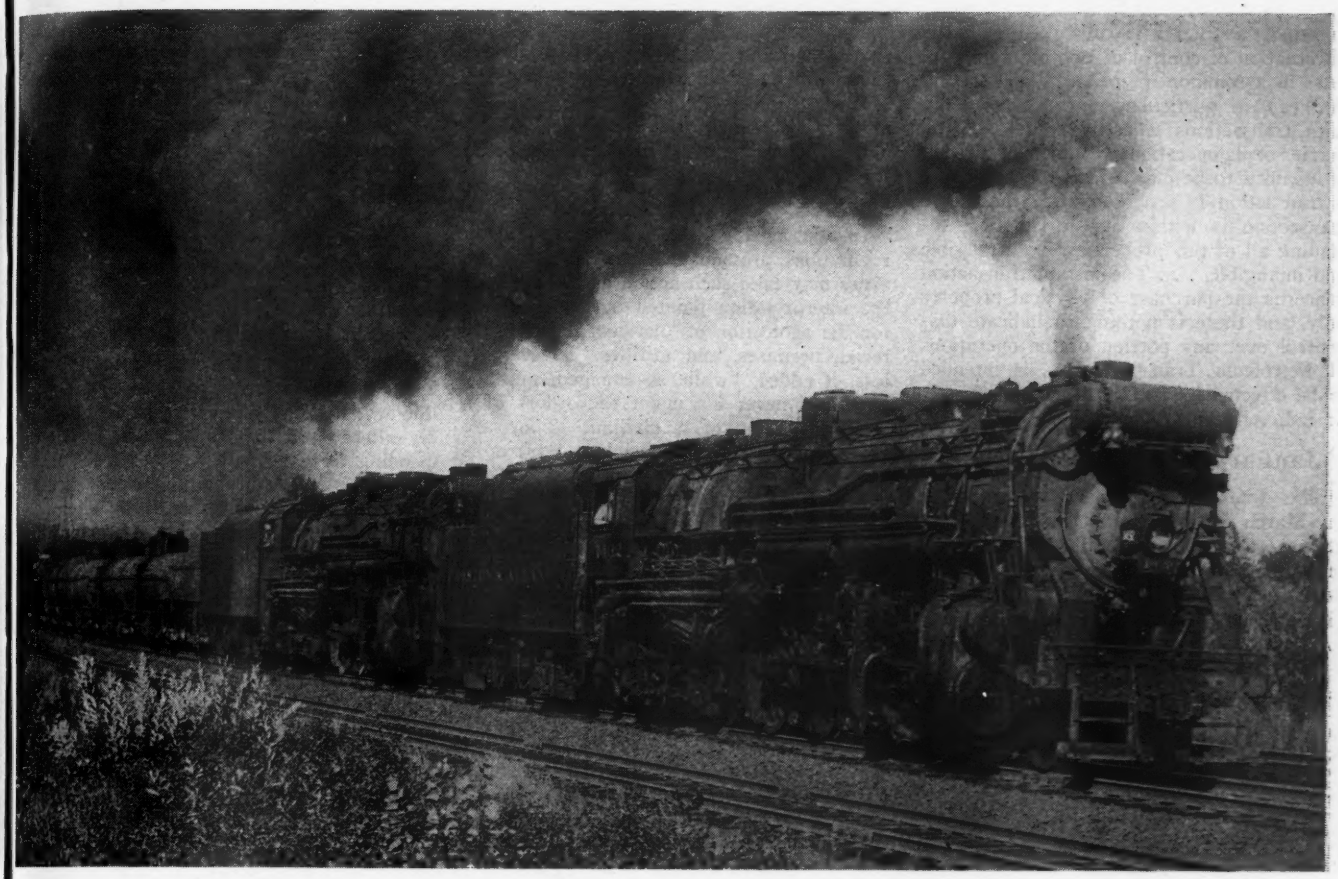

Performance is the PAY-OFF!

No railroad can wring more miles out of a locomotive than its builder has packed into it. Lima-built locomotives give you the superior performance, the extra stamina and greater mileage that flow directly from Lima's insistence upon the highest standards of design, workmanship, and materials.

The economic superiority of the steam locomotive has never been better demonstrated than by the remarkable record it has set in its speeding of the heaviest wartime traffic. In the current performance of Lima-built Modern Steam Locomotives will be found countless examples of what can actually be expected from steam power at its best.

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in mind. Section 5 is concerned with the effectuation of control of two or more carriers in a common interest . . . and section 5(2)(a) in particular is concerned only with transactions whereby control of the carrier or its operations, or any part thereof, is intended to be effected. . . . Where such a transaction is proposed, then the entire transaction is within our jurisdiction, including all of the 'properties,' both tangible and intangible. . . . The instant transaction concerns the purchase of physical property only, and there is nothing to indicate that control over any portion of the operations of Petroleum Transport, Inc., is intended to be effected by such transaction, directly or indirectly. . . ."

January Accident Statistics

The Interstate Commerce Commission on March 9 made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for the month of January. The compilation, which is subject to revision, follows:

Item	Month of January 1944	1943
Number of train accidents*	1,404	1,480
Number of casualties in train, train-service and nontrain accidents:		
Trespassers:		
Killed	106	111
Injured	70	89
Passengers on trains:		
(a) In train accidents*		
Killed	7	...
Injured	187	55
(b) In train-service accidents		
Killed	4	4
Injured	202	211
Travelers not on trains:		
Killed	3	1
Injured	97	113
Employees on duty:		
Killed	90	107
Injured	3,855	3,850
All other nontrespassers:**		
Killed	204	213
Injured	773	692
Total—All classes of persons:		
Killed	414	436
Injured	5,184	5,010

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:		
Killed	192	182
Injured	512	429

Civilians Lack Authority Over M.P.'s at Disasters

The relationship between military personnel and reporters, cameramen and other representatives of the press upon occasions of disaster, including fire, flood, earthquake, and "certain other public calamities," has been clarified by an official War Department interpretation of the requirements of the statutes, recently issued by authority of General George C. Marshall, chief of staff.

Criticism of the alleged interference of soldiers with newsmen and photographers at the scene of an accident near Rennert, N. C., on the Atlantic Coast Line on December 16, 1943, appeared at the time in the press and on the radio. It was asserted that military police, reportedly acting at the request of officers or employees of the railroad, had prevented reporters and camermen from carrying out their assigned work in reporting the event. The circumstances of this accident, which involved northbound and southbound sections of the "Tamiami Champion," and which resulted in the deaths of 72 passengers, including military personnel, and in injuries to 187 persons, were reported in *Railway Age* of January 22, page 253.

M. P.'s Should Use Authority Wisely—In the event of any emergency, army regulations provide than "an officer of the army may take such action as is justified," the interpretation pointed out, particularly for the protection of "national defense material, premises, and utilities." Nevertheless, it added, "while so engaged, military personnel never act under the orders of a civil officer or of a civilian. They are solely and directly responsible to their military superiors."

As to the specific type of situation underlying the criticisms that followed this accident, the interpretation went on to say: "In nearly all cases of domestic disturbances or disasters, the events in connection therewith are newsworthy items which are normally disseminated by press, radio, and newsreel. The public is entitled to all such news so long as the publication thereof will not adversely affect the war effort. The policy of the War Department is that the legitimate activities of news agencies toward that end are to be respected by military personnel."

Proposed Report on Forwarder Interests of Carrier Officers

Making its proposed report in the Ex Parte No. 155 proceeding involving the ownership by common-carrier officers of stock in freight forwarders, the Interstate Commerce Commission's Bureau of Water Carriers and Freight Forwarders has advised the commission as to how it should administer the "conflicting" provisions of the Interstate Commerce Act's sections 411(c) and 411(g).

The former makes it unlawful for any director, officer, employee, or agent of a common carrier, or any person controlling, controlled by, or under common control with a common carrier, to have any interest in a freight forwarder, except director's qualifying shares "from which no personal pecuniary benefit is derived by the holder." Section 411(g), on the other hand, stipulates that nothing in the act shall be construed to make it unlawful for any common carrier, or any person controlling a common carrier, to have or acquire control of a freight forwarder.

R. R. Forwarder Control O. K.—The bureau thinks the conflict should be resolved in favor of section 411(g); for the legislative history of the act makes it clear that "Congress well understood that certain common carriers by railroad and motor vehicle either controlled or had a substantial financial interest in freight forwarders, and reached the conclusion, after careful consideration, that this situation should not be disturbed." In view of the "sweeping provisions of section 411(g), the commission should hold that subsection to be the dominating one," the report says.

Therefore, it adds: "It is clear that if a director, officer, employee, or agent of a common carrier subject to parts I, II, or III of the act does not control the company of which he is a director, officer, employee, or agent, he may not have a personal pecuniary interest in a freight forwarder. On the other hand, if a director, officer, employee, or agent controls a common carrier subject to parts I, II, or III of the act, he may control a freight forwarder without being in violation of section 411(c). Such a controlling director, officer, employee, or agent may not, however, own a minority interest in a freight forwarder without being in violation of section 411(c)."

The proposed report looks into the situation of each of the proceeding's 18 respondents in the light of the foregoing, recommending that some be held in violation of the act; that the proceeding be dismissed as to others; and that the case be held open pending further inquiry with respect to the remaining ones, and for the purpose of dealing with additional respondents whom the commission may want to bring in from time to time.

I. C. C. Service Orders

Delays in the unloading of certain cars have resulted in the Interstate Commerce Commission's Service Orders Nos. 185 and 186, directing the railroads involved immediately to unload the specified cars. These orders apply, respectively, to 3 cars loaded with sheet steel, on hand on the Central of New Jersey at Jersey City, N. J., since January 10, and to 46 cars of coal at Van Nest, N. Y., on the New York, New Haven & Hartford, 47 cars of coal at Juniata Scales and South Amboy, N. J., on the Pennsylvania, 46 cars of coal at Port Reading, N. J., on the Reading, and 3 cars of coal at Brooklyn, N. Y., on the South Brooklyn Railway, all of which "have been on hand a considerable time."

The commission on March 15 issued Amendment No. 1 to Service Order 184, changing the effective date of that order from March 16 to April 3. As noted in last week's issue, page 511, the order is designed to eliminate delays resulting from holding for billing of cars loaded with fresh, frozen, or salted meats, packing house products or by-products.

Pullman-Standard Sues C. I. O. Union for Libel

Suit, seeking damages of $1,000,000, was filed by the Pullman-Standard Car Manufacturing Company in the federal district court at Chicago on March 15 against Local No. 2928 of the United Steel Workers of America affiliated with the Congress of Industrial Organizations.

The complaint charges that statements published in "The Keel," the union's newspaper and distributed to 3,500 employees at the Calumet ship yards of the company, were wholly false and have injured the company, its reputation, business, credit and relations with its employees.

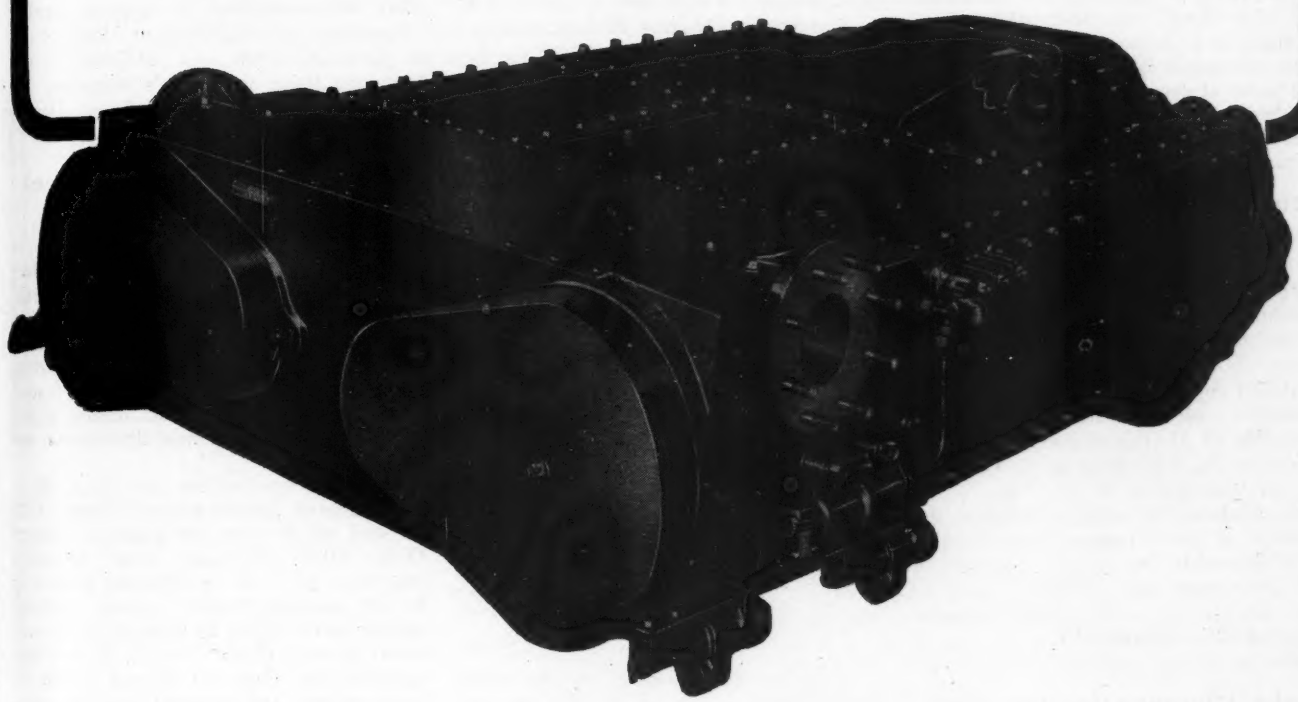
Profit Ratio 1.81 Per Cent—The incident revolves around a "pie-chart" published by Pullman-Standard in newspapers and magazines in December and January, showing that out of every dollar received by that company in carrying out the operations of its business in 1943, only 1.81 cents represented profit. This amount was subject to possible decrease through mandatory revision of prices under the Re-

News Department continued on next left-hand page

SMOOTHER OPERATION

WITH THE

NEW TYPE "E" BOOSTER*



Designed expressly to meet today's more exacting operating conditions, the new Type "E" Booster is more powerful and more economical in its use of steam.

A roller bearing crank shaft securely housed in the engine bed makes for smooth running, freedom from lost motion, and long life with minimum maintenance. New air control assures more efficient Booster operation, and engagement at higher speeds. Short cut-off takes full advantage of the expansive properties of steam and effects marked economies in steam consumption. A special starting feature enables the Booster to develop maximum starting effort.

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negotiation Act, and subject further to the ultimate liquidation of inventories without loss upon general termination of war contracts and to the expense of getting back into commercial work when the war is over.

The complaint charges that the defendants, including the district director of the United Steel Workers of America, Local 2928, its president, vice-president, treasurer, publicity director and assistant publicity director, "wickedly and maliciously intending to injure the plaintiff and the business of the plaintiff, published in 'The Keel' a certain libel containing among other things, false, malicious, defamatory and libelous matters concerning the plaintiff and its business."

Profits Exaggerated.—One statement published contended that the company made $50,000,000 profits instead of a few million dollars and charged the company with falsifying to the public and the workers. "The Keel" also said, "You claim that there is a shortage of paper and yet in one newspaper alone you have wasted more paper at greater cost than could possibly be used to supply towels to all the toilets and the washrooms in the Pullman empire."

Truck Rehabilitation Booklet

A 13-page pamphlet entitled "Rehabilitation and Preventive Maintenance," dealing with the Office of Defense Transportation's rehabilitation program for trucks and buses and the kindred subject of preventive maintenance measures to maintain existing transportation equipment, is being distributed to automotive trade publications and industry groups, the O. D. T. announced March 15. Copies may be obtained from the O. D. T. office in Washington, D. C.

The rehabilitation program involves the exchange of worn engines, transmissions and differentials for rebuilt components with a minimum truck or bus lay-over in shop. Its purpose is to expedite reconditioning of older vehicles so as to keep more vehicles on the road more days in the year.

Seeks Appropriation for "Fair Employment" Committee

President Roosevelt has transmitted to Congress a request for a fiscal 1945 appropriation of $585,000 for his "Fair Employment Practice" Committee which has heretofore been financed by allotments from his emergency funds. Among the committee's major activities has been its proceedings against Southern railroads and railroad labor organizations for alleged discrimination against negroes.

The Presidential request went to Capitol Hill after the Senate committee on appropriations had reported the Independent Offices Appropriation Bill for fiscal 1945 with a provision to the effect that no funds appropriated by Congress could be alloted to any agency established by Executive order after such agency had been in existence for more than one year, if the Congress has not appropriated any money specifically for such agency or specifically authorized the expenditure of funds by it.

The provision further stipulates that any existing agency created by Executive order "shall be deemed to have been in existence during the existence of any other agency or instrumentality, established by a prior Executive order, if the principal functions of both such agencies or instrumentalities are substantially the same or similar." F. E. P. C. in its present form was established by Executive Order 9346 of May 27, 1943; but its predecessors run back to Executive Order 8802 of June 25, 1941.

Freight Car Loading

Loadings of revenue freight for the week ended March 11 totaled 781,533 cars, the Association of American Railroads announced on March 16. This was a decrease of 6,722 cars, or 0.9 per cent below the preceding week, an increase of 12,488 cars, or 1.6 per cent above the corresponding week last year, and a decrease of 17,823 cars, or 2.2 per cent below the comparable 1942 week.

Loading of revenue freight for the week ended March 4 totaled 788,255 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, March 4

District	1944	1943	1942
Eastern	160,546	151,336	162,712
Allegheny	175,276	163,832	172,212
Pocahontas	52,699	56,746	43,960
Southern	124,148	116,488	120,223
Northwestern	86,982	80,807	93,380
Central Western	118,644	113,969	116,454
Southwestern	69,960	65,748	61,544
Total Western Districts	275,586	260,524	271,378
Total All Roads	788,255	748,926	770,485
Commodities			
Grain and grain products	48,281	50,440	38,356
Live stock	15,059	12,850	10,689
Coal	172,485	174,617	145,218
Coke	14,883	15,221	13,755
Forest products	43,184	39,499	43,132
Ore	13,475	13,024	13,541
Merchandise l.c.l.	104,911	93,729	148,513
Miscellaneous	375,977	349,546	357,481
March 4	788,255	748,926	770,485
February 26	782,463	782,921	781,859
February 19	775,692	752,019	778,420
February 12	795,262	765,271	782,701
February 5	806,075	755,514	783,962
Cumulative Total, 10 Weeks	7,744,224	7,336,462	7,751,906

In Canada.—Carloadings for the week ended March 4 totaled 69,207 compared with 68,330 for the previous week and 63,424 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
Mar. 4, 1944	69,207	42,517
Feb. 26, 1944	68,330	41,530
Feb. 19, 1944	65,623	38,974
Mar. 6, 1943	63,424	40,332
Cumulative Totals for Canada		
Mar. 4, 1944	607,600	351,544
Mar. 6, 1943	537,618	333,782
Mar. 7, 1942	558,012	287,494

Childe Still Doing Freight Rate Chores for Stewart

C. E. Childe, a member of the Transportation Board of Investigation and Research, continues at the call of Senator Stewart, Democrat of Tennessee, whenever the latter wants a job done on pronouncements in opposition to his view that the present freight-rate structure discriminates against the South. The latest Childe effort along that line was the "analysis" he made at the senator's request of the speech entitled "The South Is a Beneficiary, Not a Victim, of Its Freight Rate System," which was made by Alvin W. Vogtle of Birmingham, Ala., at a November 2, 1943, meeting of the Rotary Club of Nashville, Tenn.

Senator Stewart had the Vogtle address and the Childe analysis printed in the appendix to the March 13 issue of the Congressional Record where they occupied 4⅞ pages, the estimated cost of having them inserted being $225. On a previous occasion, as noted in the *Railway Age* of October 30, 1943, page 700, Mr. Childe responded in like fashion to another Stewart call. Then the B. I. R. member came forward with an analysis of the pamphlet entitled "Freight Rates to Fit Needs, Not Theories," which was issued by the Association of American Railroads and the American Short Line Railroad Association.

Also, in March 13 issue of the Record there was reprinted the article entitled "Kangaroos in the Freight Rates," by A. J. Ribe, which was published in the February issue of Nation's Business. It was inserted by Senator Maloney, Democrat of Connecticut.

O. D. T. Registration Replaces Joint Information Offices

A new registration plan affecting over-the-road truck operators will go into effect March 27, the Office of Defense Transportation announced last week. Adopted after consultation with motor carriers and union heads, this program calls for the registration of freight and of empty or partly loaded vehicles at O. D. T. district offices, which are located at 142 points throughout the country.

Under the terms of the new order, which is designated Administrative Order ODT 10—and which takes the place of General Order ODT 13, under which provision was made for Joint Information Offices to be set up—tank trucks, certain trucking operations conducted by farmers, and movements of small trucks (that is, those whose capacity load does not exceed 12,000 lb. gross weight) are exempted from the registration requirements. Other truck movements are required to be registered, and the opinion was expressed that this procedure will result in faster movement of "vital war freight" in greater volume.

Must Seek Full Return Loads—In the event that a carrier's empty or partly laden truck is not near an O. D. T. district office, it was explained, he still is required to communicate with shippers or other carriers in the vicinity, if he is a common carrier, or with other carriers if he is a private or contract carrier, for the purpose of obtaining a capacity load or of leasing his empty vehicle. Upon registration with an O. D. T. district office, a common carrier may be directed by the district manager to accept and transport freight which has been likewise registered, or, if his truck is empty, to lease it to another carrier.

Partly loaded trucks of contract and private carriers will not be registered, but their empty trucks will be registered and may be leased to other carriers at the direction of the O. D. T. district manager. Restrictions on such requirements are set forth in this connection, so that no carrier will be di-

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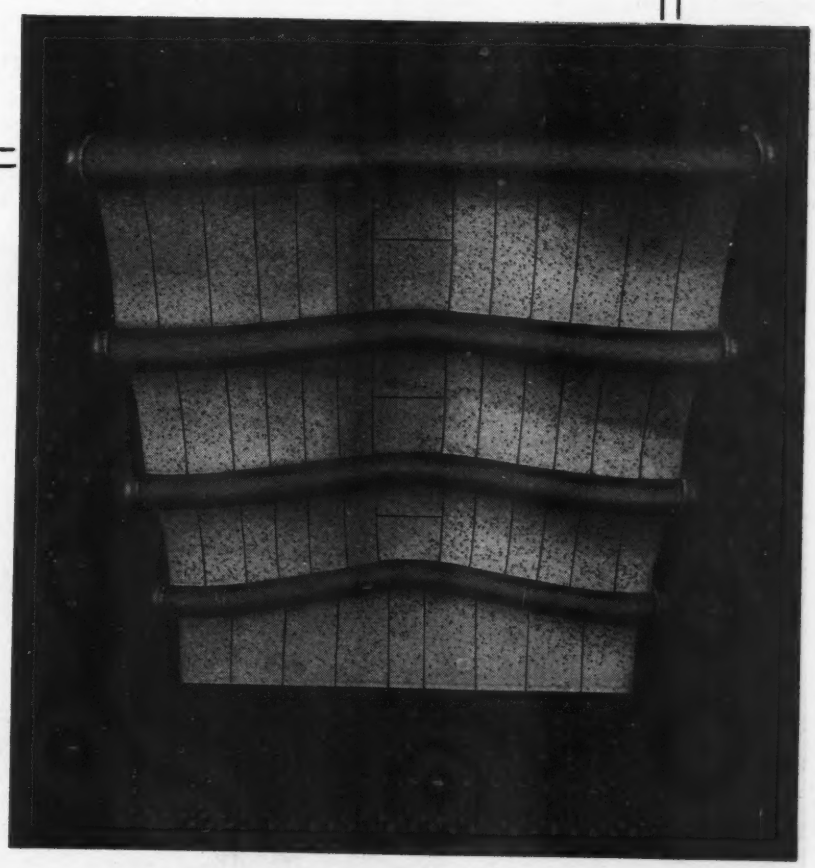
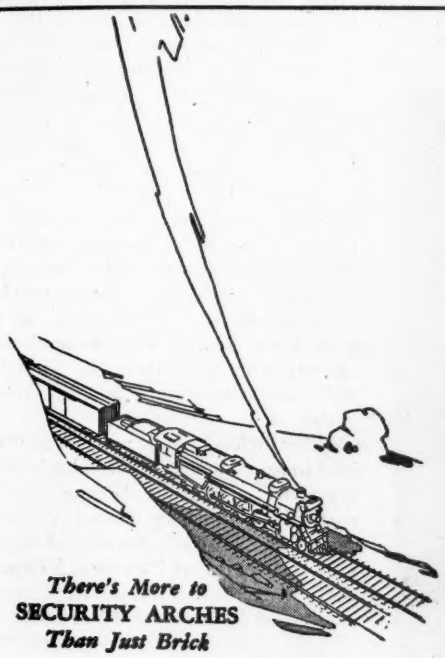
Today, more than ever, fuel is one of our strategic materials. Making every pound of fuel produce the maximum amount of steam not only conserves this strategic material but also the cars required to transport it.

For over 33 years, Security Sectional Arches have been saving fuel on all types of steam locomotives.

But experience has proved that only with a *complete* Arch can maximum fuel economy be realized.





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SECURITY ARCHES
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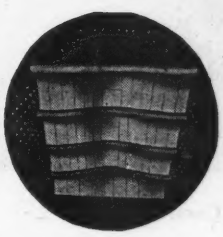
Refractory Specialists



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rected to transport freight in a vehicle inadequate for the purpose, to move more than a capacity load, or to travel more than 25 per cent in addition to the mileage the truck would otherwise travel to reach its original destination.

At the same time a reporting system has been set up to provide for a weekly interchange of information about truck traffic and vehicle flow between districts, the O. D. T. pointed out. This system is intended to enable district managers to expedite traffic and to assist carriers in eliminating dead mileage and accomplishing more efficient use of equipment and manpower.

Scientific Approach to a Standard Size Coach Seat

An attempt to determine a standard dimension for the "coach seat of the future" will get under way March 22, when the Boston & Maine sets up a specially-designed chair in the main concourse at North Station, Boston, and invites passengers to "sit in" on an experiment conducted jointly with Harvard University and the Heywood-Wakefield Company, Gardner, Mass.

"Fitting railroad coach seats to the public instead of the public to the seats" is the basis for the 4-min. tests to be given 3,000 passenger participants. Director of the project is head of the department of anthropology, at Harvard, Dr. E. A. Hooton, who, with his assistants will tabulate the reactions of an equal number of men and women to various adjustments of the chair, which was constructed for the experiment by Heywood-Wakefield.

Through a series of measurements, it will be determined what seat height, length, breadth and distance from the floor best provides a "maximum of comfort for the majority of individuals." As has been pointed out by Dr. Hooton, present seat cushions vary from 16 to 21 in., depending on the particular design of the coach. "Somewhere in that range," he believes, "is a figure which should standardize the fundamentals of railroad coach seat dimension."

Federal Barge Line's Certificate Modified by I. C. C.

Bringing the "grandfather-clause" certificate of the government-owned Inland Waterways Corporation into line with its latest determinations, the Interstate Commerce Commission, Division 4, has modified its prior report in W-381 to grant I. W. C. separate authority to operate as a common carrier in the performance of general towage within the territory of its other common-carrier operations.

At the time of the prior report (December 17, 1942), it was the position of the commission that a certificated common carrier did not require separate authority to tow shippers' barges. Since then it has issued a report on reconsideration in *Eastern Transp. Co. Contract Carrier Application,* 250 I.C.C. 635, granting separate authority to perform general towage; and it has "affirmed and clarified" that action in *Campbell Transportation Company Common Carrier Application,* decided December 14, 1943.

February Export Freight

Export freight, excluding coal and grain, handled through United States ports in February totaled 127,051 cars, compared with 86,225 cars in the same month last year, or an increase of 47 per cent, according to the Association of American Railroads.

Export grain unloaded at the ports totaled 3,373, compared with 2,796 in February, 1943, or an increase of 21 per cent. In addition, the railroads handled 1,232 carloads of coastal freight in February, compared with 442 in the same month in 1943, or an increase of 179 per cent.

The total of 131,656 cars of export and coastal freight, excluding coal, handled through the ports represented an average daily unloading of 4,540 cars in February.

I. C. C. Fails to Restore House Cut in Valuation Funds

Despite its urgent and elaborately-supported plea to the Senate committee on appropriations, the Interstate Commerce Commission will have to take a fiscal 1945 appropriation with a Bureau-of-Valuation funds reduction which, in the words of Commissioner Miller, "will cut the guts out of" that bureau's organization. The Independent Offices bill, which carries the I. C. C. funds, has been reported to the Senate with only the House-approved $500,000 for the Bureau of Valuation—$155,000 less than was recommended by the Bureau of the Budget.

The bill, as reported to the Senate, provides a total of $9,171,700—$10,000 less than the House approved. The $10,000 taken from the appropriation for motor transport regulation, had been proposed for the purchase of seven passenger motor vehicles. Thus the proposed motor regulation appropriation becomes $3,250,000.

Got Behind by Doing War Work—In their undertaking to restore the Bureau of Valuation appropriation to the $655,000 recommended by the Bureau of the Budget, Commissioners Mahaffie and Miller made to the Senate committee a presentation along the lines of that made previously before the House committee, as noted in the *Railway Age* of January 29, page 289. In other words, they pointed out how the Bureau's own work has got further behind than usual while its staff has been employed on many war-effort assignments from other agencies. Testimonials as to the good work done on such assignments were offered; they came from the United States Maritime Commission, and the Navy Department.

Nevertheless, the Senate committee, like its House counterpart, seemingly remained unconvinced that the Bureau's work was particularly pressing when it could be deferred for such assignments. A letter from I. C. C. Chairman Patterson indicated that the reduced appropriation will cause a reduction of 50 persons in the bureau's staff of 154. And Commissioner Miller pointed out that the organization "is made up of highly trained valuation experts who have mostly been in the service of the commission from 25 to 30 years."

Old-Timers Will Be Let Out—If the $155,000 is not restored, he said, "the records covering the changes in the railroad and pipe-line properties will begin to take on a degree of obsolescence and inadequacy which we shall be unable to prevent with such a reduced bureau." Moreover,

A Test Chair for Passengers' Comfort

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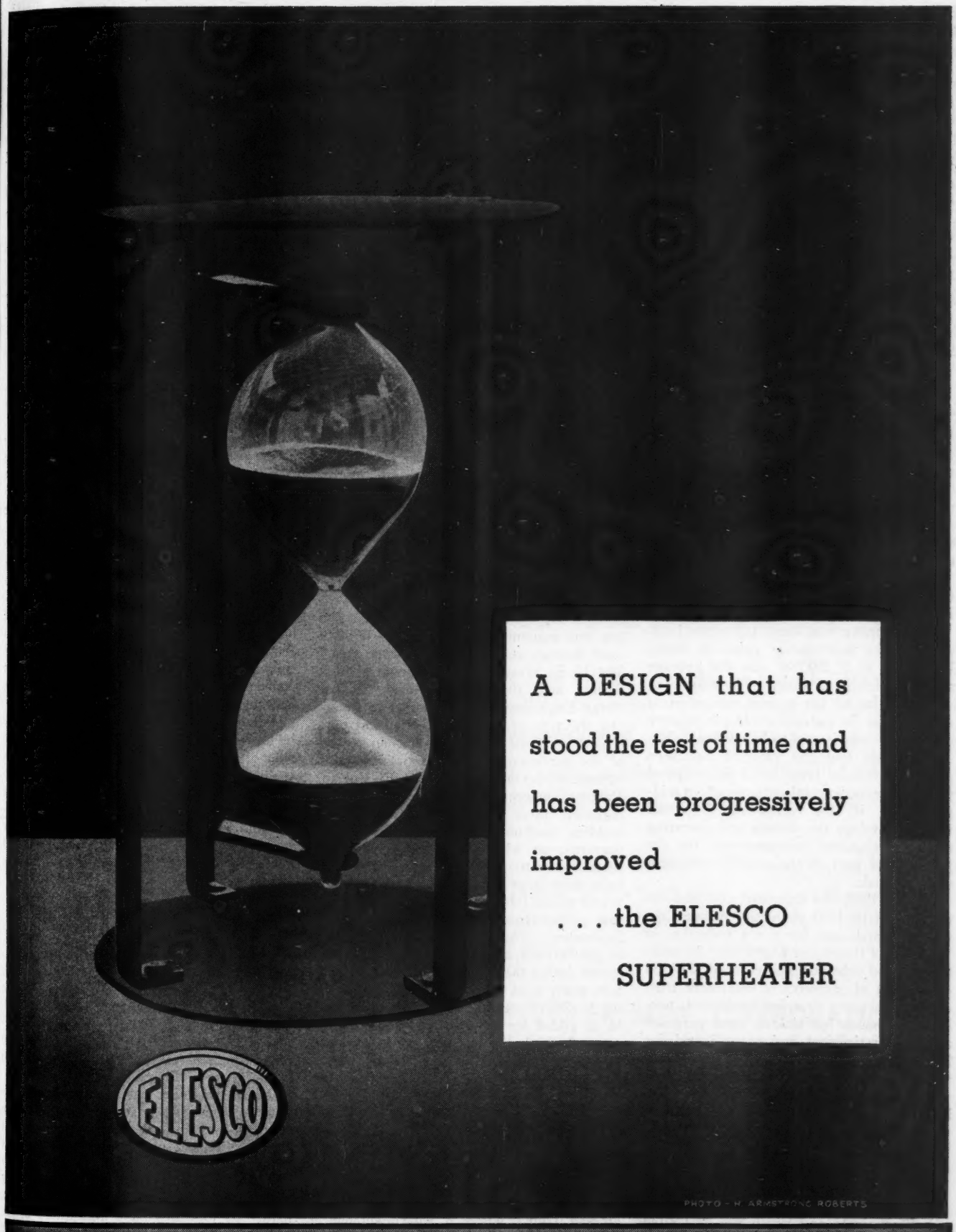
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. . . the ELESCO SUPERHEATER
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THE SUPERHEATER COMPANY, LTD.

he added, it will be "almost impossible" to recruit again after the war the employees released at this time.

The Senate committee also approved appropriations totalling $99,000,000 for the Public Roads Administration—$11,000,000 less than the bill carried as it came from the House. The cuts were $10,000,000 from the proposed appropriation for the strategic highway network, reducing that item from $20,000,000 to $10,000,000; and $1,000,000 from the amount provided for surveys and plans, reducing that item to $4,000,000. Meanwhile, the Senate committee added a provision which stipulates that all previous P. R. A. appropriations impounded by any agency or official "are hereby released and made available for obligation or expenditure for the purpose for which they were originally appropriated."

G. M. & O. Contemplates Complete Dieselization

In his annual report to the stockholders, I. B. Tigrett, president of the Gulf, Mobile & Ohio, stated that the board of directors has under consideration a program for the complete Dieselization of the railroad's motive power. Preliminary studies are reported to indicate that savings of between $800,000 and $1,000,000 annually could be effected after completion of the program. The estimated cost of the number of Diesel units needed to handle the expected traffic is $9,000,000.

The company now owns 151 steam locomotives, the depreciation value of which is carried at $1,209,788, and the average age of which is 25 years. The re-sale or salvage value of the present equipment at such time as the railroad could get delivery of Diesel power is said to be nominal. Mr. Tigrett said that the railroad has been promised certain units of freight Diesel power for experimental purposes about mid-year, and, if this equipment, in actual service, develops the savings and operating efficiency expected, arrangements for the purchase of part of the needed equipment will be made.

During 1943, the company paid and retired all of its 1950 maturities through refinancing and cash for a net reduction in funded debt thereby of $3,099,000. In addition, funded debt was also reduced $717,334 on account of payments of equipment trust certificates, notes covering equipment, purchase of bonds for sinking fund purposes and debt retirement and notes issued for $172,850 for the purchase of one Diesel road locomotive, making total net debt reduction during the year $3,643,484. Selected items from the railroad's income statement are reported elsewhere in the financial columns of this issue.

Costa Rican Rueful of Costly Highway "Lesson"

Indiscriminate and lavish use of United States money, men and materials in the building of the Inter-American Highway from the Panama Canal to southern Mexico is the charge of a Costa Rican who was employed for a year on the project by U. S. Army Engineers. He calls it the "Forty-Million-Dollar Lesson."

In an article in the March issue of "The Inter-American," the writer, Alvaro Facio, tells his story. "The waste of time, money and material might be considered none of my business, since the Army Engineers were spending North American money," writes Mr. Alvaro, himself an engineer, ". . . but I protest against any operation reflecting discredit on my profession."

When the U. S. Army went into Central America, in June, 1942, to rush the highway to completion, there were 625 miles of road to build. It is the claim of the Army Engineers' office that 311 miles of standard road have been completed and 137 miles of sub-standard all-weather road, plus considerable clearing of right-of-way. Mr. Alvaro says "more nearly 200 miles are usable and possible to link up with the rest of the highway." Much of the grading will be washed away during the rainy season, he figures.

Estimating that about $40 million was spent on the project, "and arbitrarily allowing a generous ten million for the salvageable clearing and grading, the cost of the remaining 200 miles of completed useful road comes to $150,000 per mile," calculates the author. A "good average figure, including the worst and best stretches for road construction in Central America is about $40,000 per mile," he adjudges.

With each contractor given a cost-plus contract, enabling him to spend any amount of money on his section of the road and still make a profit, each was given, as well, reports Mr. Alvaro, "a high priority to buy any equipment he wanted to build a road through country he had never seen." The U. S. Army rented equipment at high figures, and "there was no evidence that Army Engineers made any effort to supervise the type or amount of equipment purchased." While the writer has no record of the percentage of excess or unsuitable equipment, he does say that at El Volcan, Panama, where he last worked on the highway, "there was much brand-new road-building machinery which had never been uncrated, on which the Army had paid rental for many months." He cited specifically two large dump trucks which were towed to the job in February, 1942, adding that neither truck "turned a wheel" until September. These were priced originally at $14,000 each, and drew a rental of $11,000 apiece during the months of idleness. Tractors, many used ones, cost $4,500, and drew up to $9,700 rental, with another $2,000 being added for an over-haul job. These rates, the author points out, are in addition to shipment charges, fuel, oil, repair, parts, and labor, all of which were furnished by the Army.

Personally familiar with four divisions, San Isidro and Golfito, in Costa Rica, and El Volcan and Concepcion, in Panama, Mr. Alvaro quotes equipment rental alone for one division averaged $22,000 weekly.

He charges inefficient distribution of men at San Isidro, where a full maintenance and operating crew of more than 20 arrived the latter half of 1942. "No equipment was sent up to them until the middle of May, 1943," he said. In the interim, they worked as laborers at between $1.05 minimum and $1.80 maximum an hour. He added, "Costa Rican labor would have done the same work at 50 to 60 cents, U. S., per day."

There is related the incident of the 500-ton steamer Don Rafael, which was rented to the Army at $500 a day. It lay at Puntarenas for one month and four days, says the author, "without lifting anchor." It then made one trip with virtually no cargo to Puerto Armuelles, Panama, about an 18-hr. trip. On the return trip the ship carried around 30 contractors' men and Army engineers . . . no cargo." At this juncture, the captain of the vessel asked for release from the charter to put his ship back in the island trade.

There was an excess of labor, observes Mr. Alvaro, but "neither the Army nor the contracts made any attempt to weed out the troublemakers, loafers, drunks and incompetents." The Army's reply to urgings that certain men be sent home "for the good of the job" was that it would be "too expensive." Yet, suggests the writer, the fare to Los Angeles and New York is under $150, and many of the men averaged more than $125 a week.

Such a waste might even partially have been justified, the writer feels, had the Army ever finished the highway. But, in southern Costa Rica, in the 99 miles from San Isidro to the Panamanian border, there is "not one mile of usable road," he reports, and "not even a roadbed which the Public Roads engineers can use in continuing their painstaking work." Various road engineers, he said, have estimated $10 million was spent in this region, but "no one but the contracts and the imported North American labor have benefited." Much of this labor, he charged, was unskilled in construction work, but that fact was not reflected in their pay.

Admitting that in his stretch of country he undoubtedly saw "the darkest possible side of the picture," because that section is the "worst part of the entire Inter-American Highway route," the author allows that it is his understanding that the contractors and the Army did "much better in Honduras, El Salvado, Nicaragua, and northern Costa Rica, where the going is not so tough."

Personnel Needs Drop to 97,000

Personnel needs of the railroads aggregated 97,000 on February 1, compared with 109,000 on January 1, according to the United States Railroad Retirement Board. Although the needs as of February 1 represent a decrease from the peak of 117,000 recorded on November 1, they were 43,000 higher than on February 1, 1943.

Recent wage increases granted to railroad employees have stimulated interest in railroad jobs in some areas, have made it easier to recruit new employees and have reduced resignations among those already employed. Continuation of the recruiting of Mexicans and layoffs in war plants in numerous localities have also aided in the reduction of needs. However, it is expected that the return of many employees now working on the railroads to farm work in the spring and the increase of maintenance work when the Northern roadbeds thaw, will bring about more acute shortages of laborers in the near future.

Shortage of Laborers Eased—A comparison of labor shortages in the different

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News Department continued on next left-hand page

Will Insure Greater Achievements

BY moving 638 billion ton-miles of freight and recording 54 billion passenger-miles in a year the American railroads have established an all-time record.

Wear-resisting parts made from HUNT-SPILLER *Air Furnace* GUN IRON have played a big part in this achievement.

Complete application of all the HSGI parts listed below will reduce repairs in the back shop and roundhouse and increase locomotive availability—"Keep 'em rolling to Victory this year."

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Duplex Sectional Type Packing
for Cylinders and Valves
Duplex Springs for Above
(Duplex Sectional Packing)
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occupational groups, made on the basis of figures received from employers who reported in both January and February, discloses that needs were lower in each of the seven occupational groups. The largest decline—8,400—was in reported needs for laborers. This is the third consecutive month in which the number of unfilled laborer jobs has decreased, and as in the preceding month, the greater part of the decrease was in track laborers.

Although numerically smaller, the drop in needs for additional trainmen and enginemen was sharper than that for laborers. The decrease from January in reported needs was 2,200 or 24 per cent. Little change occurred in shortages of skilled trades journeymen and helpers and apprentices. The combined needs for these two groups were a few hundred less than in January, but the greater decreases in other groups resulted in the needs for skilled and semi-skilled trades workers forming 27 per cent of the reported needs, compared with 24 per cent of the total reported in January.

Personnel Needs of Employers Reporting for Both January and February[1]
February 1, 1944

Occupational group	Needs reported: Number	Per cent of total	Per cent of January
1. Executives, professional men, telegraphers, and clerks	3,758	4.3	90.9
2. Trainmen and enginemen	6,887	7.9	76.1
3. Skilled trades journeymen	11,098	12.7	98.4
4. Skilled trades helpers and apprentices	12,276	14.1	99.0
5. Laborers	50,426	57.9	85.8
6. Attendants, cooks, porters and waiters	1,865	2.1	97.0
7. Miscellaneous	869	1.0	94.5
Total	87,179	100.0	88.5

[1] The total of personnel needs reported in this table is smaller than the number mentioned in the text above since it excludes the needs of those employers who did not also report for January.

Geographical Differences—Labor supply conditions improved in all but one of the geographical areas. The drop was sharpest in the Pacific Coast states, where needs of employers who submitted reports for both January and February were 22 per cent lower. In this area, 2,900 fewer laborers were needed, and the declines in needs for helpers and apprentices and train-and-engine service workers were 500 and 150, respectively.

Shortages were 16 per cent less in Kansas, Missouri, Oklahoma, Arkansas, Texas and Louisiana, and 14 per cent less in the New England states.

N. Y. C. Advertisement Salutes Bomber Ground Crew Chief

The New York Central is honoring "unsung heroes of the war" in a public service advertising series scheduled to appear over a 12-week period in 555 newspapers, and 441 communities. The campaign is linked to that of the Eastern railroads and keyed to the new theme of "The Harder Job Ahead."

First advertisement in the N. Y. C. series is a salute to the bomber ground crew chief, which it terms the "nameless hero of the A. A. F." The illustration, entitled "He Sweats It Out," is that of a typical crew-chief in overalls, looking skyward for his plane as a group of bombers return from a mission.

The advertisement draws the parallel that "most of us must also fight this war by sweating it out," observing that the closer the victory, the "tougher the job will be."

Future "unsung heroes" to receive similar notice in the advertising series will be chosen from the Coast Guard, Army Services of Supply and Navy Seabees.

Pullman-Canadian National Pool Agreement Is Criticised

An agreement between the Pullman Company on the one hand and the Canadian National and its affiliates, the Central Vermont and Grand Trunk Western, on the other, concerning the use of Pullman and railroad-owned sleeping cars on the lines of that railway system and the distribution of resulting expenses and earnings does "contemplate pooling and division of traffic, service and earnings," and therefore requires the specific approval of the Interstate Commerce Commission, according to a proposed report by Examiner Charles W. Berry in the commission's No. 29040 proceeding.

The examiner recommended that the commission should find that the evidence does not show that this agreement is in the interest of better service to the public or of economy of operation, as required by section 5(1) of the Interstate Commerce Act, and that its approval is therefore not warranted.

Analyzing the terms of the agreement in some detail, the examiner held that the meaning of some of its provisions was not clear and that it set up alternative methods of settlement between the parties to be used "at their pleasure," with the result that the commission has been asked to approve a contract that is, so far as a division of earnings is concerned, "without decisive force and effect."

Whose Convenience?—"It is accepted, of course," said the examiner, "that a through sleeping car service is more convenient to the traveling public than one that requires changing of cars at border points, but the convenience of passengers on a particular line is not the only factor to be considered. When as here the cost of maintenance of an international through run is borne to a considerable extent by patrons of lines of the Pullman Company throughout the United States, the convenience of passengers on that line cannot be accepted as a determinative factor and the agreement that brings about such a condition cannot be accepted as being 'in the interest of better service to the public.'"

The report went on to say the record showed that under pre-war conditions the Pullman Company found it to its advantage, while it had ample equipment available, to keep extra cars in service even though the revenue therefrom merely covered the cost of operation without any provision for depreciation or return on investment, as was the result of the agreement under examination, partly because "the rates in Canada are very badly depressed."

"Through service can be maintained as readily by the Pullman Company at compensatory fares and charges or by the Canadian National with cars operated by it as by the considered agreement for the division of traffic and earnings," the examiner held. "The evidence furnishes no assurance that the Pullman Company will have a surplus of serviceable cars after the present shortage ends." Even if it did, he went on to say, the agreement would require Pullman not merely to furnish idle cars that may be available, upon the railroad's request, but to "keep on hand and available a sufficient number of standard sleeping cars to meet the varying needs of the Canadian National and the other carriers owned and operated by it and to furnish such cars on request." Under the terms of the contract, he did not find this provision in the interest of better service "to the public generally and not solely to passengers on a particular run."

Union Pacific Rents Two Floors in Chicago Loop

The Union Pacific and the Pacific Fruit Express have leased the second and fourth floors of the Roanoke building, 11 South LaSalle street, Chicago, in which its ticket office is located on the ground floor. A permit to spend $40,000 in remodeling the 25,000 sq. ft. has been issued by the building commissioner. Its freight department is now located at 58 East Washington street.

Reviews 21 Years of British Consolidated Railways

As a result of the overall decline in heavy traffic and the growth of highway traffic, the railways of Britain "have never been able to earn the £51 million of 'standard' net revenue a year which they were permitted to earn by the Railways Act of 1921," but though return on their capital has been "meager," the railways have "on the whole stood up well" to the difficulties of the past 21 years, providing some return to investors and maintaining their equipment in good condition.

Thus does Walter Hill, assistant editor of "The Economist" (London), analyze the financial state of the British system of regionally consolidated railways on the occasion of its 21st birthday, January 1. As to future events, Mr. Hill feels they are "likely to confound forecasts as much as they did during the first 21 years."

A period of "significant economic change" can be seen in the financial record of the four main line railroad companies—the London Midland & Scottish, the London & North Eastern, the Great Western, and the Southern—since their creation from more than 100 existing companies in 1921, Mr. Hill states. In every category—coal, heavy freight, merchandise, and passengers—gross receipts have declined. The writer attributes this to the "change in the nature and volume of Britain's business activity and to the growth of highway transport. Gross receipts from general merchandise fell from £51,218,000 in 1923 to £41,692,000 in 1937; coal declined from 209 million long tons in 1924 to 188 million tons in 1937, and heavy merchandise traffic fell from 65 million tons to 59 millions during the same period.

Net revenue of the four main companies

News Department continued on next left-hand page

It's the "little" things . . . The successful completion of today's *big* war projects depend on "little" things . . . Like rugged floors that withstand punishing hours of wear . . . Safe floors that prevent costly falling accidents. "A.W." Rolled Steel Floor Plate can be cut and installed almost overnight without disturbing production. Illustrated is the "A.W." Super-Diamond Pattern which resists slipping in *any* direction. Oil-proof, heat-proof, fire-proof, crack-proof. Write for folder.

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MAIN OFFICE AND MILLS: CONSHOHOCKEN, PENNSYLVANIA : SINCE 1826. District Offices and Representatives: Philadelphia, New York, Boston, Atlanta, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Houston, St. Paul, New Orleans, Pittsburgh, Roanoke, Sanford, N. C., St. Louis, Los Angeles, San Francisco, Seattle, Montreal.

declined from £45,585,000 in 1923 to £28,984,000 in 1938.

The author observes that £330 million have been spent on the replacement of equipment during the past 21 years.

Retirement Board Reviews Operations

Nearly 76 per cent of employee annuities certified in the six-months period from July to December, 1943, were for old-age retirements, according to a review of the Railroad Retirement Board. About 96 per cent of the annuities had both prior and subsequent service credited and 89 per cent of them were in active service on August 29, 1935.

Retirement benefits certified to the Treasury in January, the Board reports, totaled $11,181,000. On January 31, there were 136,533 employee annuities in force, with an average monthly benefit of $66.38. The 22,374 pensions in force average $59.08. Survivor annuitants, numbering 3,559, received an average of $31.90, while 573 death-benefits annuitants received average payments of $35.17. Lump-sum death benefits were certified in 1,028 cases in January, with an average payment of $382.98.

Administrative expenses in January totaled $187,000, leaving $1,156,000 of the $2,554,000 originally appropriated for these expenses during the fiscal year 1944.

Unemployment insurance claims and benefits in January showed an increase over those for December, the report continues. Half of the 4,200 claims received during the month were from workers in the Minneapolis, Minn. and Chicago region. Both the net number and amount of benefit payments doubled the December figures. In January, 2,890 benefits were paid, totaling $73,000. Benefit accounts were opened for 950 railroad workers, and 40 accounts were exhausted.

Job placements during January numbered 62,700, compared with 77,300 made in December. Employer orders and openings declined sharply. At the end of the month, 104,880 openings on active orders remained unfilled. Mexican Nationals brought in during the month totaled 6,266.

Head Surveys Air Cargo Prospects

(*Continued from page 570*)

Mr. Head continued to say that air express had grown from 17 thousand shipments in 1928 to over 1.5 millions with gross revenue of $11 millions in 1943.

Knows Customers' Needs—"Our interest in the future development of air express," he said further, "was plainly indicated in the extensive customer survey we made before the war. More than 93,000 of our customers were personally interviewed in order that we might learn the extent to which we should expand our air express service to meet their transportation requirements. Our inquiry also undertook to develop the level of rates that would permit them to move their various commodities in air express service. We have been serving most of these customers for generations; they have confidence in our service and in our resourcefulness in meeting their future transportation needs.

"We find that many of these long-time customers are now in war production, but in their postwar planning they contemplate enlarging their output and variety of products. But they insist that mass production, under our national economy, is the basis for the lowest possible selling price to the consumer. They point out that this requires a holding or warehousing period in the process of distribution and marketing, chiefly so that transportation costs may be held to the minimum. In their opinion, these uncertainties as to the future costs of air transportation must be removed before they can determine, in any definite way, the extent to which they will need to expand their use of air express after the war. I feel that any future expansion in air express traffic should not adversely affect the orderly processes of marketing and distribution, which are vital elements in our national economy. In return, they asked us two pointed questions:

1. What are air express rates going to be in the postwar period?

2. Are we going to be deprived of any of the advantages of your nation-wide completely coordinated and integrated air-rail service?

Will Integrated Service Cease?—"As to the first question, diligent study of developments in aviation indicates a wide difference of opinion as to costs involved in air transport service after peace comes. The answer to the second question can come only from the public authorities controlling such matters. I have in mind the Civil Aeronautics Board and the Congress. That is something in which the public interest is of great importance and that interest should be protected.

"Theorists" Oppose Integration—"Some of the theorists would have the public believe that our air express division is decadent and unable to cope with the transportation demands of tomorrow and that the airlines should, therefore, break off this arrangement substituting they know not what. These uninformed statements and obstructive articles do not originate with our airline friends, who are our partners in this enterprise. Others find nothing wrong with our handling of air express, except that Railway Express is railroad-owned. In making this criticism, they frequently use the word 'dominated' by the railroads, which is not the fact. We have consistently pursued a policy of aggressively and intelligently promoting the transportation of property by air and intend to continue to do so in future."

Debut of "The Coupler"

Central of New Jersey employees, who have been without a magazine following severance of their company's affiliation with the Reading, have received their first copies of "The Coupler," a new monthly employee journal. The March issue, Vol. 1, No. 1, contains C. N. J. news, a number of short features, as well as "Central Ties," a section devoted to personals.

Believed to be "something new in employee relations," the magazine is under the control of a committee of three labor and three management representatives, with the company footing the bill. As William Wyer, chief executive officer of the road, puts it, "there are only two exceptions to the committee's control." The first, is control of the budget, the second, the right to review editorials. The railroad does not suggest what subjects should be covered but wishes to "be certain nothing harmful to the general welfare of the employees or the company gets into the editorial columns."

Nathan W. James, for three years in the C. N. J. traffic department, was chosen editor by the committee.

Club Meetings

The Car Department Association of St. Louis (Mo.) will next meet March 21, at 8 p. m., Hotel DeSoto. The paper to be presented by George O'Brien, general vice-president, Brotherhood of Railway Carmen of America, is entitled "The Car Department in the War Effort." For the benefit of second and third trick men, who are unable to attend the evening meeting, there will be a morning session at 10 a. m., in the Knights of Columbus building, East St. Louis.

William M. Jeffers, president, Union Pacific, will discuss "Transportation Problems" at the March 20, 7 p. m. meeting of the Western Railway Club, Hotel Sherman, Chicago.

The Railway Club of Pittsburgh will next meet March 23 at 8 p. m., in the Fort Pitt Hotel. Rail defects and testing results will be discussed by H. C. Drake, director of research, Sperry Rail Service, Hoboken, N. J. Pictures will be shown.

The Car Foremen's Association of Omaha, Council Bluffs and South Omaha Interchange, will meet in the Chicago Great Western freight house in Council Bluffs, Ia., April 13, at 1:30 p. m.

"Post-War Problems—Locomotives and Cars" is the title of a paper to be presented by K. F. Nystrom (mechanical assistant, chief operating officer, Chicago, Milwaukee, St. Paul & Pacific), at the April 11, 6:30 p. m., meeting of the New England Railroad Club, in Hotel Vendome, Boston.

"Canada's Railroads" will be discussed by A. A. Gardiner, assistant general passenger traffic manager of the Canadian National, at the March 24, 7:45 p. m., meeting of the New York division of Railroad Enthusiasts. The group will gather in Room 2728, Grand Central Terminal.

The Anthracite Valley Car Foremen's Association will next meet March 20, at 6:30 p. m., in Spencers Sun Parlors, Dunmore, Pa. Harry Vernooy, division storekeeper on the Erie, will present a paper on "Conservation of Material." There will be a discussion of the A. A. R. interchange rules by A. A. Edward, general foreman, Delaware, Lackawanna & Western, Scranton.

Publicizing Fire Losses

"Fire Protection and Insurance Section" is the title given News Letter, No. 93, recently released by the Operations and Maintenance department, Transportation division, Association of American Railroads. Emphasizing that the "continuity of movement of men, materials and supplies by the railroads assumes greater importance in national defense than at any previous time,"

News Department continued on second left-hand page

READING COMPANY

FORTY-SIXTH ANNUAL REPORT FOR THE YEAR ENDED DECEMBER 31, 1943

Philadelphia, Pa., February 22, 1944.

To the Stockholders of Reading Company:

The Board of Directors submits herewith its 46th Annual Report of the operations and affairs of the Company for the year ended December 31, 1943:

	1943	1942	Increase or *Decrease*	
Average miles of road operated	1,418.21	1,425.04	*6.83*	*0.5%*
Receipts from the transportation of anthracite and bituminous coal, merchandise, passengers, etc.	$113,784,670	$102,683,717	$11,100,953	11%
Cost of operating the railroad and maintaining the property	73,679,210	63,990,872	9,688,338	15%
Net Revenues	$40,105,460	$38,692,845	$1,412,615	4%
Federal, State and other taxes	$20,622,308	$15,040,988	5,581,320	37%
Payments to other companies in excess of receipts from such companies for hire of equipment and use of joint facilities	1,558,170	1,930,117	*371,947*	*19%*
Net Railway Operating Income	$17,924,982	$21,721,740	*$3,796,758*	*17%*
Income from investment in securities, property rentals and other items	2,014,800	2,061,453	*46,653*	*2%*
Miscellaneous income deductions	570,768	796,200	*225,432*	*28%*
Gross Income before deductions for fixed charges	$19,369,014	$22,986,993	*$3,617,979*	*16%*
Fixed charges — Interest on funded debt, rentals paid for leased railroads, etc.	$7,547,703	7,695,993	*148,290*	*2%*
Net Income available for dividends and other corporate purposes	$11,821,311	$15,291,000	*$3,469,689*	*23%*
Percentage of each dollar of operating revenue consumed by operating expenses	64.75%	62.32%	2.43%	
Rate of return on investment in property used for transportation service	3.93%	4.81%	*.88%*	
Times fixed charges earned	2.57	2.99	*.42*	
Earnings per share of First and Second Preferred Stock	$8.44	$10.92	*$2.48*	
Earnings per share of Common Stock after First and Second Preferred dividend requirements of $2.00 per share each	$6.44	$8.92	*$2.48*	

Italics denotes decreases.

Financial Position, December 31st

	1943	1942	Increase or *Decrease*
Investments in land, railroad tracks, terminal facilities, shops, locomotives, freight and passenger cars and other fixed property of	$367,022,442	$365,559,833	$1,462,609
Investment in stocks, bonds and notes carried at	78,770,095	73,724,175	5,045,920
Total	$445,792,537	$439,284,008	$6,508,529
Treasury Notes Tax Series C	$9,000,000	$9,000,000	
Total Investments	$454,792,537	$448,284,008	$6,508,529
Cash	$14,309,219	$11,435,011	$2,874,208
Due from railroad companies and others	9,836,302	6,441,737	3,394,565
Fuel, rails, ties, bridge material and other supplies necessary for keeping road and equipment in good repair	7,337,652	7,416,105	*78,453*
Special deposits, deferred assets and unadjusted debits	2,923,769	2,073,002	850,767
Total assets	$489,199,479	$475,649,863	$13,549,616
Owed for materials, supplies, wages and balances to other railroad companies, and interest and rents accrued but not yet due	$13,986,257	$10,565,839	$3,420,418
Taxes accrued but not due	20,266,405	14,737,116	5,529,289
Reserve for depreciation of road and equipment	92,481,658	87,039,094	5,442,564
Deferred liabilities and unadjusted credits	1,349,641	1,391,263	*41,622*
The total of these liabilities, credits and reserves was	$128,083,961	$113,733,312	$14,350,649
After deducting these items from the total assets there remained capital net assets of	$361,115,518	$361,916,551	*$801,033*
The capitalization consisted of the following:			
Funded Debt, including bonds, equipment obligations, etc.	$105,854,295	$114,286,103	*$8,431,808*
First Preferred Stock	27,991,150	27,991,150	.....
Second Preferred Stock	41,970,600	41,970,600	.....
Common Stock	69,989,100	69,989,100	.....
Making a total capitalization of	$245,805,145	$254,236,953	*$8,431,808*
After deducting this capitalization from net assets there remained a corporate surplus of	$115,310,373	$107,679,598	$7,630,775

Italics denote decreases.

Reading Company earned $113,784,670 in 1943 from its transportation services, the largest sum of money it has ever received in any single year. Notwithstanding these record earnings, the Company received only 1.067c per ton per mile for the freight which it carried. Total earnings were at the rate of $80,200 per mile of road operated.

The following statement reflects certain traffic and revenue statistics for 1943 and all previous years in the Company's history:

	1943	Remarks
Freight:		
Anthracite Coal—		
Tons—		
Prepared	14,397,312	Highest since 1923
Unprepared	13,280,644	All-time high
Revenue	$20,691,226	Highest since 1930
Bituminous Coal—		
Tons	23,739,802	Highest since 1926
Revenue	$20,485,194	Highest since 1926
Merchandise—		
Tons	45,940,518	All-time high
Revenue	$57,210,531	All-time high
Total—		
Tons	97,358,276	All-time high
Revenue	98,386,951	All-time high
Tons carried one mile	9,222,955,350	All-time high
Passenger:		
Number	23,588,722	Highest since 1926
Revenue	$10,068,124	Highest since 1926
Per passenger per mile	1.929c	Highest since 1932
Passengers carried one mile	521,864,350	Highest since 1920

Operating expenses consumed 64.75% of the operating revenues in 1943. This was the lowest operating ratio since 1916, with the exception of 1942 when such ratio was 62.32%.

For the fifth successive year the tax bill set an all-time high record, direct taxes in 1943 amounting to $21,929,069, an increase of $6,090,428 or 38% over 1942.

Long Term and Other Debt

Changes occurred during the year in the long term and other debt of the Company as follows:

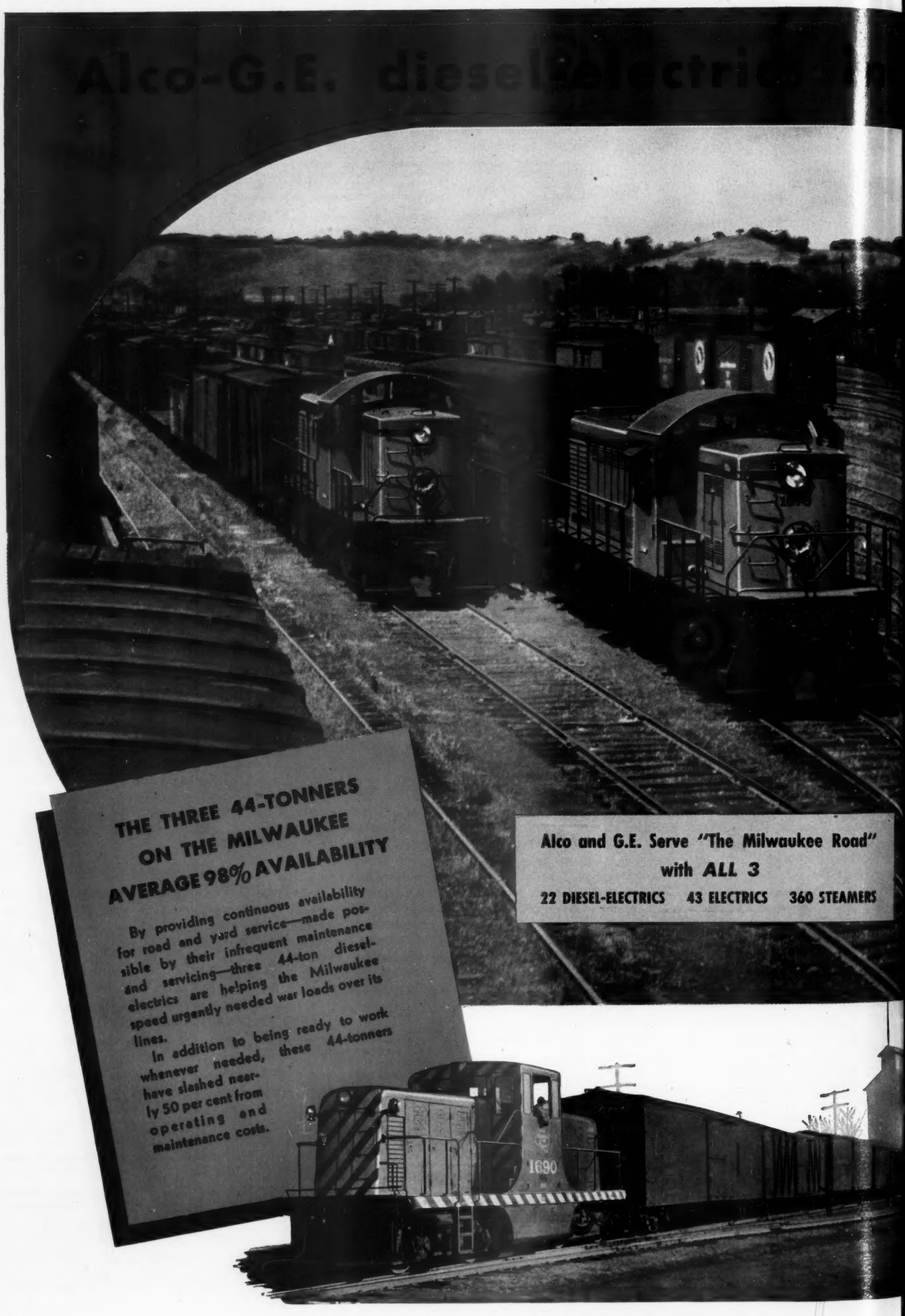
	Funded debt	Equipment Obligations
Outstanding December 31, 1942	$105,426,968.11	$3,849,318.28
Retired during year	36,100.00	3,141,318.28
Acquired for investment	4,906,000.00	.....
Outstanding December 31, 1943	$100,484,868.11	$708,000.00

During the eight years 1936-1943, publicly held indebtedness of Reading Company and its leased or operated lines, and fixed charges thereon, have been reduced as follows:

	Bonds Held by Public	Fixed Charges on Publicly-held Bonds
January 1, 1936	$146,636,741.22	$6,355,726.64
December 31, 1943	119,741,341.89	5,057,708.98
Reduction	$26,895,399.33	$1,298,017.66

EDWARD W. SCHEER, *President.*

[Advertisement]


Alco-G.E. diesel-electrics
THE THREE 44-TONNERS ON THE MILWAUKEE AVERAGE 98% AVAILABILITY
By providing continuous availability for road and yard service—made possible by their infrequent maintenance and servicing—three 44-ton diesel-electrics are helping the Milwaukee speed urgently needed war loads over its lines.
In addition to being ready to work whenever needed, these 44-tonners have slashed nearly 50 per cent from operating and maintenance costs.
Alco and G.E. Serve "The Milwaukee Road" with ALL 3
22 DIESEL-ELECTRICS 43 ELECTRICS 360 STEAMERS
1690

Milwaukee's Pig's Eye Yard

Do More Switching in Less Time

Because they are constantly available, each of these diesel-electrics moves as many cars in 24 hours as the released motive power did in 28 hours.

TO KEEP war traffic moving swiftly and without interruption through the important Pig's Eye Yard, the Milwaukee relies on the two 1000-hp Alco-G.E. diesel-electrics that are handling all cars in the east end of the yard.

These diesel-electric units are saving switching time—but not at the expense of valuable war cargoes. Their electric drive permits gentle coupling and smooth, fast acceleration, which prevents damage to vital equipment.

Because they require little maintenance and servicing, these two diesel-electrics are making available eight additional locomotive-hours a day. They go to the roundhouse only once a week for 30 minutes to take on fuel and sand, and their daily inspection is made during the crew's 20-minute lunch period.

By assigning these two Alco-G.E. units to this important yard, the Milwaukee is able to utilize scarce motive power where it can produce the greatest number of ton-miles in the shortest time.

Because we build all three types of motive power—electric, diesel-electric, and steam—we can help you, as we have helped the Milwaukee, put each type to work where it is economically best suited.

Alco
DIESEL-ELECTRIC

AMERICAN LOCOMOTIVE AND GENERAL ELECTRIC

the pamphlet asks that attention be focused on even the smallest details, that fire prevention may become a habit.

Information in the news letter is based on experiences of various railroads. It is thought that sufficient publicity given current happenings "may be the means for preventing fire losses on railroad property in general." There are discussed signal station hazards, fire doors, carbon dioxide extinguishers, fire hose, overheated journal bearings, juvenile delinquency, gasoline stoves in baggage cars, careless handling of lanterns, serious enginehouse fires, and the fire car. There is a suggested reference, as well, for detailed material on fire fighting and fire extinguishment.

Rise in Rail-Air Express

Combination rail-air express traffic handled for commercial airlines in 1943 showed an increase of 28.3 per cent over the previous year, reports the air express division of Railway Express Agency. In the 12-month period, 410,758 shipments were handled, compared with 319,983 in 1942, and express charges on this traffic exceeded $4,000,000, or 63.2 per cent more than in 1942.

December rail-air shipments totaled 41,007, an increase of 24.6 per cent over December, 1942, and charges rose 31.3 per cent.

Safe Driving Awards

Special "safe-merit" cards are being awarded 12,000 operators of Railway Express Agency trucks and station platform tractors for freedom from responsible accidents in 1943. This is the 10th year that the company has given special recognition to perfect driving records. Nearly 1,300 cards are to be presented to operators of station and depot tractors in terminals and at railroad terminals who qualified last year, and these will include a number of women drivers.

L. O. Head, president of the company, remarking upon the excellence of this record, pointed out that over 16,000 former employees are now in the armed forces, and much of the personnel is now comprised of substitute drivers.

Electrical Information Center

A new service bureau, the Electrical Manufacturers Public Information Center, has been established at 155 East 44th street, New York, to act as a central source of information about all things electrical.

As explained by Leonard Kebler, president of the National Electrical Manufacturers Association at a recent press conference, the Center will assemble available facts, "human interest" and statistical, concerning products, wartime activities, and the history and future of the industry. There will be a photograph library and an index of industry motion pictures. Editors, writers and other qualified groups will have access to background material and special sources of information. Periodical releases are to be issued.

The Center will not give facts on prices of electrical appliances, equipment or securities of individual companies. John M. Moorhead, formerly associated with the New York Herald-Tribune and Kansas City Journal, will be in charge.

Supply Trade

Brake Shoe Opens Experimental Foundry

The American Brake Shoe Company has opened a new experimental foundry at Mahwah, N. J. The new plant, which will do experimental work only, is a full-sized foundry capable of handling castings up to 2,000 lb. gross weight. The foundry will be devoted to war work for the duration. Its immediate tasks will be the development of pilot centrifugal and static castings practices for the aircraft industry; experimental work assigned by the war metallurgy committee of the National Research Council; and research projects having a bearing on the war for the eight operating divisions of the American Brake Shoe Company.

After the war, the principal activity of the foundry will be experimental and research work for Brake Shoe and its customers, including the investigation of new processes or products of interest to any of the company's hot metal divisions and the improvement of present products by changes in foundry practices, melting techniques, and rigging. The company also plans to put apprentices through a short training period in the foundry and then release them as they may be needed to the operating divisions.

Mt. Vernon Car Manufacturing Co. Purchased by H. K. Porter Co.

The H. K. Porter Company, Pittsburgh, Pa., has purchased the Mount Vernon Car Manufacturing Company, and its subsidiary, the J. P. Devine Manufacturing Company, both with plants at Mt. Vernon, Ill. The J. P. Devine Manufacturing Company produces heavy chemical, food, and oil refinery equipment. It will add to the present Porter line such products as dryers, fractionating columns, impregnators, vulcanizers, flakers, condensers, besides facilities for manufacturing equipment already produced by Porter. The new purchase adds more than 90 acres of industrial property to Porter plants, and marks the company's fourth entry into new fields in recent years.

An active expansion program is planned for the Mount Vernon Car Manufacturing Company according to T. M. Evans, president of Porter, with new types, including a line of tank cars, being added to its present line of box cars, gondolas, refrigeration cars and cabooses. Development of tank cars for better transport of chemical products will be undertaken in cooperation with the company's process equipment division. Mr. Evans said his company had extensively investigated the car manufacturing field and is of the opinion that the postwar freight car market contains a potential of 100,000 cars a year for the first five year after the war.

Since Mr. Evans came to the presidency in 1938, the Porter Company has added its process equipment division to the original locomotive plant, built and operated a naval ordnance plant at Blairsville, Pa. and in 1943, purchased the Quimby Pump Company, manufacturer of industrial and maritime pumps.

National Malleable & Steel Castings Co. Annual Report

The National Malleable & Steel Castings Co. reports net profit for 1943 of $782,297 after all charges including depreciation, amortization and provision for federal taxes, which is equivalent to $1.65 per share of common stock. Net profit in 1942 was $1,135,767. Sales of $42,917,594 in 1943 were the largest in the company's 75-year history but profits were reduced by heavy losses at one plant, due to changes in the war program, and by the combined effect of higher manufacturing costs and fixed selling prices on many products. The company began an expansion of the Cicero, Ill., malleable foundry late in 1943 which will virtually double its capacity by adding and rearranging equipment within the limits of present buildings.

No abatement of war work is yet evident and the demand for standard railroad products is steadily increasing, the report states. During the war it has not been necessary to change the type of castings the company has been accustomed to making and dealings are largely with prewar buyers.

Westinghouse Reports Biggest Year in Company's History

The Westinghouse Electric & Manufacturing Co. reported completion of the biggest year's output in the history of the company during 1943. Net sales billed totaled $714,305,303, of which approximately 77 per cent was direct war work, as compared with $487,274,551 in 1942, an increase of 47 per cent. Orders received during 1943 amounted to $958,967,057, as compared with $1,120,721,270 in 1942, and unfilled orders at December 31, 1943, totaled $885,708,065, compared with $925,449,652 at the end of 1942. Net income for the year was $22,355,300, or $6.97 per common share, as compared with $17,366,841 in 1942. The company's total taxes for the year were reported at $101,808,967, or $31.75 per share of capital stock.

Army-Navy "E" awards for excellence in production were awarded to four plants during the year, making a total of eleven such awards so far received by Westinghouse. In addition, the Maritime "M" was awarded to the merchant marine plant at Philadelphia, Pa., which began producing for the Maritime Commission in the fall of 1942.

General American Transportation Corporation

The annual report of the General American Transportation Corporation for the year ending December 31, 1943, shows a net profit of $12,969,480 before, and $4,003,380 after, Federal taxes, compared with $9,655,368 before and $3,405,368 after in 1942.

In a statement to stockholders, Lester N. Selig, president, stated that as a result of postwar planning, the company has ac-

quired the Louisville Drying Machine Company, the Turbo-Mixer Corporation, Inc., and the American Machine Company, which will be operated as the newly formed Process Equipment division. This division will engineer, manufacture and sell processing machinery to the chemical, petroleum, food, paper and pulp, distilling and other industries. "Your board," the statement continues, "believes that there will be a great demand after the war for these types of products."

The **Duff-Norton Manufacturing Company** of Pittsburgh, Pa., has moved its eastern district office in New York from the Empire State Building to 250 Park avenue.

The **La Plant-Choate Manufacturing Co., Inc.,** Cedar Rapids, Ia., has opened a sales office at 630 Fifth avenue, New York. **Jay Fetters,** formerly manager of the London office of the Caterpillar Tractor Company, has been placed in charge.

H. P. Munger, superintendent of the Niles, Ohio, electrotinning plant of the Republic Steel Corporation, has been appointed plant manager at Olean, N. Y., of two plants of the **Van der Horst Corporation of America.**

The **Electric Service Supplies Company** has changed its name to the **Electric Service Manufacturing Company. A. H. Englund,** executive vice-president, has been elected president of the company, and **J. R. McFarlin,** electrical engineer, has been elected secretary.

The **David A. Hultgren Company,** 80 East Jackson Boulevard, Chicago, has been organized by **David A. Hultgren,** formerly with the Massey Concrete Products Company, to specialize in representation for railroad and industrial supplies. One of the companies represented is the Universal Concrete Pipe Company, Columbus, Ohio.

W. Edgar Hamsher has been elected vice-president in charge of sales and servicing, Chicago territory, with offices at 80 East Jackson boulevard, Chicago, for the **Hennessy Lubricator Company,** and **E. W. Kavanaugh** has been elected vice-president in charge of sales and servicing for the southern territory, with headquarters in Roanoke, Va.

Karl Schick, Chicago zone supervisor of the **Minneapolis-Honeywell Regulator Company's** air conditioning controls division, has been appointed sales manager of the company's newly-formed railway controls division. **George Badger** and **Alan Buckley** have been appointed assistants to Mr. Schick, and **James Locke,** of the Chicago zone, has been appointed to Mr. Schick's former position.

Neil C. Hurley, president of the **Independent Pneumatic Tool Company,** has been elected chairman of the board and has been succeeded by **Neil C. Hurley, Jr.,** executive vice-president. Immediately after being graduated from the University of Notre Dame in 1932, Neil C. Hurley, Jr., entered the employ of Independent as advertising manager. In 1934 he was made manager of the electric tool division and in 1936, secretary. In 1939 he was elected vice-president and in 1943, executive vice-president.

E. C. Mersereau, vice-president in charge of sales of "Peacock" hand brakes for the **National Brake Company,** has been elected executive vice-president and a director of the company. Mr. Mersereau has been associated with the company in engineering and sales activities since 1930. He was associated with the New York Central from 1920 to 1930 and was designing engineer of the car department when he transferred to the National Brake Company.

John F. Robb has been appointed manager of the Pittsburgh, Pa., district of the **Climax Molybdenum Company.** Mr. Robb was graduated from Pennsylvania State College in 1927. Before joining the Climax technical staff in the Pittsburgh office in 1935, he was associated successively with the Carpenter Steel Company, the Birdsboro Steel Foundry & Machine Co., the Pittsburgh Crucible Steel Company, and the Brighton Electric Steel Casting Company.

William F. Vosmer was recently appointed manager of railroad sales of the **Republic Steel Corporation,** succeeding

William F. Vosmer

Emmett Conneely, deceased. A sketch of Mr. Vosmer's business career was published in the *Railway Age* of March 4, page 479.

Harvey T. Hill has been appointed executive director of the **Diesel Engine Manufacturers Association** which has opened headquarters at 1 North La Salle street, Chicago. For the past several years Mr. Hill has been secretary-manager of the Chicago Association of Credit Men. **Robert E. Friend,** president of the Nordberg Manufacturing Company, is president of the Diesel Engine Manufacturers Association; **Gordon Lefebvre,** president of the Cooper-Bessemer Corporation, is vice-president; and **Robert H. Morse, Jr.,** general sales manager of Fairbanks, Morse & Co., is treasurer.

The **American Steel & Wire Co.,** subsidiary of the United States Steel Corporation, has created two separate divisions to handle the sale of electrical products and wire rope and construction materials. **P. T. Coons,** formerly head of the electrical, wire rope and construction materials department, which has been discontinued, and **B. M. Ashbaucher,** a correspondent in that department, have been appointed manager and assistant manager, respectively, of the wire rope and construction materials division. **T. F. Peterson,** director of electrical cable engineering and research, and **C. H. Eisenhardt,** formerly assistant manager of the electrical wire rope and construction materials department, have been appointed manager and assistant manager, respectively, of the newly-created electrical division.

John K. Colgate, vice-president and treasurer of the **Tyson Bearing Corporation,** Massillon, Ohio, has been elected president, to succeed **Ralph Maxson,** who has resigned.

OBITUARY

William George Kranz, former vice-president and a director of the National Malleable & Steel Castings Co., died early this month. Mr. Kranz joined National Malleable as works manager of the Sharon, Pa., plant in 1899, and was transferred to Cleveland, Ohio, in 1916, as vice-president in charge of operations, which position he held until his retirement in 1938.

O. T. Arnold, general traffic manager of the Caterpillar Tractor Company, died March 2. Mr. Arnold had been associated with the Caterpillar Company and one of its predecessor companies, the Holt Manufacturing Company, since 1912. Prior thereto he was employed with the Illinois Traction System and in the freight department of the Peoria & Pekin Union.

"YOUR SON AND TEN FIGHTING GENERALS."—With this title, the American Brake Shoe Company has issued another of its good will books, which was written for the company in this instance by Donald Wilhelm. Taking as its theme that "the fate of your boy, mine and millions of others, is directly in the hands of ten men—General Marshall and the nine other generals in command of our war theatres and armies," the book presents informal word and photographic portraits of these generals. The book is the third such publication issued by the American Brake Shoe Company. When Eddie Rickenbacker delivered his radio address on his 21-day ordeal on a raft in the Pacific Ocean, the company printed the talk and sent a copy to all workers in its 59 plants. A large number of requests for copies of the book were received from persons not connected with the company, and to satisfy these, a deluxe edition of Captain Rickenbacker's address was issued. A few months later, the company issued in book form, "Fat Girl," by Charles Rawlings, a reprint of an article which appeared in the Saturday Evening Post, recounting the heroic exploits of the tanker, "Neosho." So well received was "Fat Girl" that Brake Shoe decided to continue the series by publishing another war book, this one especially written for it by journalist Donald Wilhelm. About 5,000 copies of the third book have been mailed.

Construction

BALTIMORE & OHIO.—This railroad has awarded a contract for the construction of engine terminal facilities at Chillicothe, Ohio, at estimated cost of $21,000, to Baker & Hickey, of Columbus, Ohio.

MISSOURI PACIFIC.—In connection with a relocation of line of approximately 1 mile in the vicinity of Barrett, Mo., on the St. Louis-Kansas City main line, this road has applied to the Interstate Commerce Commission for authority to construct the new segment of track and to abandon the old.

VIRGINIAN.—This company has asked the Interstate Commerce Commission to extend for two years the time within which it is authorized to construct its so-called Huff branch and a 10.4-mile extension of its Morri branch, both in West Virginia. Certificates of authority, as extended, now expire April 15 and June 30, respectively.

Equipment and Supplies

LOCOMOTIVES

The TENNESSEE CENTRAL is inquiring for four steam locomotives of 2-8-4 or 2-8-2 wheel arrangement.

The BANGOR & AROOSTOCK is considering the purchase of two steam locomotives including one of 2-8-0 wheel arrangement and one of 4-8-2 wheel arrangement.

FREIGHT CARS

New Freight Car Orders Are Exceeding Deliveries

The backlog of new freight cars on order at March 1 totaled 43,300, as compared with 38,100 at the end of 1943. The increase of 5,200 in the number of undelivered cars during the first two months of this year is due chiefly to an excess of new cars ordered over deliveries during the period. Of the 43,300 on order on March 1, 39,400 were released for building by the War Production Board and 3,900 were without W. P. B. authorization to build, as compared with 34,600 released and 3,500 not authorized at January 1. The March 1 backlog was divided 26,200 on order with contract carbuilders, of which 3,800 were unauthorized for building, and 17,100 with railroad shops, of which only about 100 were unauthorized.

The 39,400 currently authorized for building comprise 16,050 box, 15,550 hopper, 4,500 gondola, 850 flat, 1,320 refrigerator, 500 stock, 200 tank, and 430 caboose cars. Included are about 900 remaining to be shipped of the number authorized by the W. P. B. from third quarter, 1943 materials; 7,100 remaining of W. P. B. authorizations from fourth quarter materials; 9,850 from first quarter, 1944 materials; 14,180 released from authorized advance allotments of materials for the second quarter, 1944; 6,280 from third quarter, 1944 materials, and 1,090 from fourth quarter, 1944 materials.

The BANGOR & AROOSTOOK is inquiring for 35 hopper cars of 50 tons' capacity.

The CHICAGO & NORTH WESTERN is inquiring for 2,000 box cars of 50 tons' capacity.

The ERIE has filed its inquiry for 600 hopper cars of 50 tons' capacity, awarding the contract to the Greenville Steel Car Company.

The MINNEAPOLIS & ST. LOUIS has placed an order for 500 box cars of 50 tons' capacity with the General American Transportation Corporation.

The PAULISTA RAILWAY OF BRAZIL is reported in the market for 500 42-metric ton box cars, the inquiry for which equipment was originally issued late last year.

The DELAWARE, LACKAWANNA & WESTERN has placed orders for 600 box cars of 50 tons' capacity, allocating 350 to the Magor Car Corporation and 250 to the American Car & Foundry Co.

The NASHVILLE, CHATTANOOGA & ST. LOUIS has placed an order for 200 hopper cars with the Pullman-Standard Car Manufacturing Company. The inquiry for this equipment was reported in the *Railway Age* of March 4.

PASSENGER CARS

Louisville & Nashville Seeks 28 Passenger Cars

The Louisville & Nashville has filed applications with the War Production Board for authority to purchase 28 lightweight passenger-train cars and with the tax amortization section for authority to amortize the equipment. If the necessary releases are granted, the order will be placed with the American Car & Foundry Co. Included are 20 coaches, 4 tavern-lounge cars and 4 dining cars. The cars will be of aluminum construction with anodized aluminum sides. The cost is estimated at about $2,000,000.

The ATLANTA & WEST POINT-WESTERN OF ALABAMA is reported to be considering the purchase of two baggage-express cars.

The DENVER & RIO GRANDE WESTERN is reported to have under consideration the purchase of ten new passenger-train cars, including two mail-baggage cars, two baggage-dormitory cars, four coaches and two dining cars.

SIGNALING

The CHICAGO, ROCK ISLAND & PACIFIC has received materials from the Union Switch & Signal Co. to extend the present centralized traffic control system between Trenton, Mo., and Polo, from Trenton on to Allerton, Ia., a distance of 50 miles. Included are searchlight signals, style M-22-B dual control switch movements, relays, housings and code apparatus, with a new section for the control machine. The Rock Island's regular forces are doing the field construction work.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Annual Report.*—The annual report of this company for the year ended December 31, 1943, shows net income of $57,440,364, after interest and other charges, a decrease of $16,223,988 as compared with net income in 1942. During the year funded debt was reduced by $10,945,249, leaving outstanding in the hands of the public $271,317,500. Selected items from the income statement follow:

	1943	Increase or Decrease Compared With 1942
RAILWAY OPERATING REVENUES	$471,119,015	+$109,970,085
Maintenance of way	51,800,557	+16,474,143
Maintenance of equipment	70,068,740	+16,153,030
Transportation	120,956,580	+23,256,465
TOTAL OPERATING EXPENSES	256,456,095	+58,128,928
NET REVENUE FROM OPERATIONS	214,662,920	+51,841,157
Railway tax accruals	144,869,638	+68,603,355
RAILWAY OPERATING INCOME	69,793,282	−16,762,198
Net equipment and joint facility rents	3,953,534	+945,663
NET RAILWAY OPERATING INCOME	65,839,748	−17,707,861
Other income	3,212,777	+836,616
TOTAL INCOME	69,052,525	−16,871,245
Rent for leased road and equipment	1,557	.....
DEDUCTIONS FROM GROSS INCOME	666,911	+110,908
Income available for interest on funded debt	68,385,614	−16,982,153
Interest on funded debt	10,945,249	−758,166
NET INCOME	57,440,364	−16,223,988

CANADIAN PACIFIC—*Report for 1943.*—Gross earnings at the highest level in the history of the company and net income at the highest level since 1928, and as such the second highest on record, are shown in the Canadian Pacific's financial statement for 1943, released following a meeting of the board of directors at Montreal last week. Gross earnings of $297,107,000 in 1943 exceeded 1942 earnings by $40,200,000, or 16 per cent. Operating expenses of $247,896,000 were $39,300,000 over last year's and net operating earnings of $49,211,000 compared with $48,187,000 in 1942. Other income totaled $16,271,000 and total fixed charges $22,500,000 leaving net income for the year of $42,982,718. After deducting preferred stock dividends of $5,042,782, the balance of $37,939,936 amounted to $2.83 per ordinary share as compared with $2.63 in 1942.

CANTON & CARTHAGE.—*Promissory Note and Trackage Agreement.*—This road has applied to the Interstate Commerce Commission for authority to issue to the Denkmann Lumber Co. a 5-year 6 per cent promissory note for $234,278, secured by deed of trust on its property, in place of a matured note originally issued for $280,000. At the same time authority was sought to enter into a revised trackage agreement with the lumber company concerning freight operations between River Junction, Miss.,

and Koch, as a result of which the road would abandon operations on two segments of line, one from Sand Hill to Koch, 1.5 miles, and one from Carthage, Miss., to Edinburg, 14 miles.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Equipment Trust.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $7,260,000 of series X equipment trust certificates sold at 100.0056 to the First National Bank of Chicago and others, resulting in an average annual cost to the road of 1.87 per cent. Proceeds are to be employed to the extent of 75 per cent of the total cost in the purchase of cars and locomotives as enumerated in *Railway Age* of February 5, page 334.

CHICAGO & NORTH WESTERN.—*Reorganization Expenses.*—Maximum allowances for expenses and compensation for services in connection with this road's reorganization proceedings have been approved by Division 4 of the Interstate Commerce Commission for the period May 1, 1940, to August 31, 1943. Allowances thus approved total $411,011. Other costs of the reorganization, as far as they had been determined up to that point, amounted to $1,734,699, bringing the aggregate expense so far established to $2,299,261. The division's report points out that additional claims will have to be considered, particularly with respect to the period since August 31, 1943.

The amounts approved at this time were established in connection with claims totaling $545,275. The largest claim was that of Sidley, McPherson, Austin & Burgess, counsel for the so-called Walker committee, representing various insurance companies, amounting to $89,299; the maximum fixed by the division therefor was $80,799. Other large claims included those of Luther M. Walter and Helen W. Munsert, counsel for the debtor company, for $51,566, of which $36,402 was approved; Robert K. Stuart, chairman of the directors' committee, for $18,514, of which $11,014 was allowed; Robert E. Smith, technical adviser of that committee, for $15,527, of which $11,824 was allowed; John M. MacGregor, counsel for the so-called Harrison committee for preferred stockholders, for $13,440, of which the division approved $7,500; and Oliver & Donnally, counsel for the Bruere committee representing savings banks, for $50,000, which was approved to the extent of $45,000.

Other large claims were those of certain trustees, including the United States Trust Co., which was allowed its full claim of $11,377; the City Bank Farmers Trust Co., allowed $15,288 on a claim for $18,788; and the Irving Trust Co., allowed $9,341 on a claim for $11,841. Among counsel for these trustees were, respectively, Wilson & McIlvaine, who sought $15,322 and were allowed $10,322; Mitchell, Capron, Marsh, Angulo & Cooney, who asked $40,114 and were allowed $20,114; and Davies, Auerbach, Cornell & Hardy, whose claim for $35,000 was approved to the extent of $18,000.

A petition of James L. and Irene G. Coombes claiming $11,000 for "services rendered while defending their 100 shares of common stock" was disallowed by the division with the comment that "claimants have rendered no compensable services that have come to our attention."

Among other allowances fixed by the division were the following: Reconstruction Finance Corp., $3,127 on a claim for that amount; Cravath, de Gersdorff, Swaine & Wood, counsel for the Bovenizer committee, representing secured notes, $6,909 on a $10,909 claim; the National Conference of Investors, for services to certain committees representing stockholders, $9,967 on claims for $17,016; and Coverdale & Colpitts, technical advisers to the Walker and Bruere committees, $5,229, which was the amount claimed.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization.*—The Interstate Commerce Commission has received petitions from this road's management and from representatives of various groups of security holders asking modification of its proposed plan of reorganization. The management has asked that the proposed capitalization be increased so that it may reflect to some extent the large earning capacity recently demonstrated by the property.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization Expenses.*—Division 4 of the Interstate Commerce Commission has approved final allowances for compensation and expenses arising from the activities of the protective committee for the first & refunding mortgage 4 per cent bonds and secured 4½ per cent bonds in connection with this road's reorganization. For the period February 1, 1941, to October 31, 1943, the total approved was $56,876; Root, Clark, Buckner & Ballantine, counsel, were allowed $18,044 for services and expenses; and allocations to banks included the following: Central Hanover Bank & Trust Co., $16,895; Harris Trust & Savings Bank, $3,833; City Bank Farmers Trust Co., $10,458. Root, Clark, Buckner & Ballantine were allowed $3,910 also for services and expenses for the period since October 31, and other items brought the total approved for this period to $7,700.

DENVER & RIO GRANDE WESTERN.—*Reorganization Expenses.*—Allowances for compensation and expenses for the period May 20, 1940, to July 1, 1943, as approved by Division 4 of the Interstate Commerce Commission in connection with this road's reorganization amount to $248,398, as compared to $403,800 claimed. Among the larger allocations were those to counsel for the insurance group bondholders' committee, of which Hunton, Williams, Anderson, Gay & Moore were allowed $49,000 on a claim of $72,662; Hughes, Richards, Hubbard & Ewing were allowed $11,801, having claimed $26,834; and Grant, Shafroth & Toll were allowed $6,906, having claimed $18,756. In addition, this committee was allowed $10,902 for claims totalling $11,011, and its technical adviser, Wm. Wyer & Co., was allowed $19,450 on a claim of $19,522.

Wm. Wyer & Co. also was allotted smaller amounts as adviser to other interests, including $2,060 for services to the debtor company. The claim of the Reconstruction Finance Corp for $5,451 was allowed in full. Other large claims included those of the Central Hanover Bank & Trust Co., trustee, which sought $19,156 and was allowed $14,156; its counsel, Rathbone, Perry, Kelley & Drye, allowed $12,000 on a $22,500 claim; Guaranty Trust Co., trustee, allowed $11,409 on a claim for $29,022; its counsel, Davis Polk Wardwell Sunderland & Kiendl, allowed $10,000 on a $20,000 claim; United States Trust Co., trustee, allowed $11,270 on a $15,770 claim; Chase National Bank, trustee, allowed $22,740 upon claims totaling $32,240; its counsel, Milbank, Tweed & Hope, allowed $12,000 on a $27,000 claim; and Pierce & Greer and Hodges, Vidal & Gore, counsel for the debtor company, allowed collectively $15,715 on claims amounting to $24,279.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Completion of Reorganization.*—Division 4 of the Interstate Commerce Commission has approved the issue of new securities and the acquisition of the properties of the debtor company by the new Fonda, Johnstown & Gloversville Railroad Co., as provided by the plan of reorganization previously approved by the commission and the court.

GULF, MOBILE & OHIO.—*Annual Report.*—The preliminary annual report of this company for 1942 shows net income of $4,328,168, after interest and other charges, an increase of $297,952 as compared with 1942. Selected items from the income statement follow:

	1943	Increase or Decrease Compared With 1942
Average Mileage Operated	1,972.41	+3.5
RAILWAY OPERATING REVENUES	$37,858,695	+$4,685,544
Maintenance of way and structures	5,866,663	+1,356,678
Maintenance of equipment	6,010,379	+1,042,340
Transportation	10,298,459	+1,360,298
TOTAL OPERATING EXPENSES	24,720,016	+4,045,033
NET REVENUE FROM OPERATIONS	13,138,680	+640,511
Railway tax accruals	5,019,206	+367,806
RAILWAY OPERATING INCOME	8,119,474	+272,705
Equipment rents	1,837,014	+374,307
Joint facility rents	96,490	+1,227
NET RAILWAY OPERATING INCOME	5,918,935	+270,267
Other income	185,588	+18,326
TOTAL INCOME	6,104,523	+288,593
Rent for leased roads and equipment	169,349	−1,907
Fixed interest	1,176,567	−54,146
TOTAL DEDUCTIONS FROM GROSS INCOME	1,776,355	−9,359
NET INCOME	4,328,168	+297,952

MIDDLETOWN & UNIONVILLE.—*Trustee Appointment.*—Division 4 of the Interstate Commerce Commission has ratified the appointment of Louis E. Zieres as trustee of this road in its section 77 reorganization.

SEABOARD AIR LINE.—*Tampa Northern Reorganization.*—In connection with the reorganization of the Seaboard Air Line, a plan for the reorganization of its subsidiary, the Tampa Northern, has been filed with the Interstate Commerce Commission.

NEW YORK CENTRAL.—*New Directors.*—Lawrence N. Murray, first vice-president of the Melton National Bank, Pittsburgh, Pa., has been elected a member of the board of the New York Central to succeed the late W. K. Vanderbilt. Mr. Murray is also

a director of the Pittsburgh & Lake Erie and of the Pittsburgh, McKeesport & Youghiogheny. George Whitney has been elected a director of the Cleveland, Cincinnati, Chicago & St. Louis and of the New York & Harlem, and appointed a member of the executive committee of both companies, also to succeed Mr. Vanderbilt. Willard F. Place, vice-president, finance, of the New York Central, has been elected a director of the Mahoning Coal Railroad and Gustav Metzman, vice-president of the New York Central, has been appointed a director of the Cleveland, Cincinnati, Chicago & St. Louis, to succeed W. F. Schaff. Raymond D. Starbuck, executive vice-president of the New York Central, has been appointed a member of the executive committee.

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization Expenses.*—Division 4 of the Interstate Commerce Commission has approved budgets of expenditures for the period February 1 to April 30, 1944, of protective committees for the preferred and common stockholders in this road's reorganization proceedings, each for $1,837.

NEW YORK, NEW HAVEN & HARTFORD.—*Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue $2,244,960 of promissory notes in connection with the purchase under conditional sales agreements, at a total cost of $2,807,440, of which 20 per cent will be paid on delivery, of the following equipment from the American Locomotive Co.: ten 2,000 h.p. diesel-electric road locomotives at $173,894 each; six 1,000 h.p. diesel-electric switching locomotives at $78,500 each; and ten 660 h.p. diesel-electric switching locomotives at $69,750 each.

PERE MARQUETTE.—*Water Carrier Certificate.*—Division 4 of the Interstate Commerce Commission has granted this company's certificate of convenience and necessity covering its common carrier operations under part III of the Interstate Commerce Act, that is, for the transportation of passengers and of vehicles, loaded and empty, other than railroad cars, by self-propelled vessels, between the ports of Ludington, Mich., and Milwaukee, Manitowoc, and Kewaunee, Wis.

In the accompanying report the division pointed out that this company would have been entitled to a grandfather clause certificate covering this operation if it had filed an application therefor under the appropriate provision of the act. The carrier, however, had asked that it be found exempt from regulation under part III of the act, contending, among other things, that the operation involved constituted car ferry service performed by a railroad. Citing the precedent established in its finding in the Ann Arbor case, the division held that, while the transportation of railroad cars under the conditions here existing was exempt from regulation under part III, the transportation of passengers and other vehicles was not.

The division dismissed the protest of the Wisconsin & Michigan Steamship Co., which was authorized to operate between Muskegon, Mich., and Milwaukee under the provisions of part III, and which had opposed the Pere Marquette's application with respect to the movement of new automobiles without license plates attached.

SEABOARD AIR LINE.—*Reorganization.*—The Seaboard Railway Company has applied to the Interstate Commerce Commission for authority to issue certain securities and to assume certain liabilities to make effective the plan of reorganization of the Seaboard Air Line approved by the federal district court. The new company would issue $32,500,000 of 40-year series A 4 per cent first mortgage bonds; $52,500,000 of 50-year series A 4½ per cent income mortgage bonds; $15,000,000 of 5 per cent preferred stock; and 850,000 shares of no-par common stock. In addition, the new company would issue as required up to 675,000 shares of no-par common stock in exchange for other securities. The old company's liabilities as to various security issues of affiliated and subsidiary companies would be assumed, as well as for $11,870,000 of equipment obligations.

In connection with the reorganization, the new company also has applied for authority to assume certain lease, joint use, and trackage rights agreements of the old company. The application contemplated separate operation of the following companies, though the Seaboard Railway proposes to acquire the interest of the S. A. L. therein: Baltimore Steam Packet Co.; Macon, Dublin & Savannah; Charlotte, Monroe & Columbia; Chesterfield & Lancaster; Raleigh & Charleston; Jacksonville, Gainesville & Gulf; and Tavares & Gulf.

Average Prices Stocks and Bonds

	March 14	Last week	Last year
Average price of 20 representative railway stocks..	40.23	39.88	34.12
Average price of 20 representative railway bonds..	86.88	86.56	74.85

Dividends Declared

Carolina, Clinchfield & Ohio.—$1.25, quarterly, payable April 20 to holders of record April 10.

Chicago & Eastern Illinois.—$1.00, annually, payable April 15 to holders of record March 31.

Mahoning Coal.—Irregular, $6.25, payable April 1 to holders of record March 24.

Norwich & Worcester.—8% preferred, $2.00, quarterly, payable April 1 to holders of record March 15.

Pittsburgh, Bessemer & Lake Erie.—75¢, semi-annually, payable April 1 to holders of record March 15.

Abandonments

FORT SMITH, SUBIACO & ROCK ISLAND.—This road's application for authority to abandon its line from a point near Scranton, Ark., to Paris, about 16 miles, has at its request been dismissed by the Interstate Commerce Commission.

PENNSYLVANIA. — This road and the Western New York & Pennsylvania have filed with the Interstate Commerce Commission a joint application seeking authority, respectively, to abandon operation of and to abandon the latter's 2.74-mile branch line between Scottsville, N. Y., and Garbutt.

IN HOLLAND.—German occupation authorities are reported to have ordered railway officers to strip Dutch railroad cars of all brass, copper and bronze fittings, including knobs and levers, door-handles and plates. Door locks alone are exempt in this latest attempt to relieve an acute shortage of vital war materials, says Foreign Commerce Weekly.

Railway Officers

EXECUTIVE

Arthur Anderson has been appointed assistant to vice-president of the New York Central System, with headquarters at Washington, D. C. Mr. Anderson succeeds **John G. Brennan,** whose death was reported in the *Railway Age* of March 4.

FINANCIAL, LEGAL AND ACCOUNTING

J. C. Sites, assistant comptroller of the Chicago & Eastern Illinois, with headquarters at Chicago, has been promoted to comptroller, with the same headquarters, succeeding **William A. Ragel,** whose death on January 3 was reported in the *Railway Age* of January 8. **Carl F. Schwartz,** chief clerk of the comptroller, has been advanced to assistant comptroller, with headquarters as before at Chicago, replacing Mr. Sites.

OPERATING

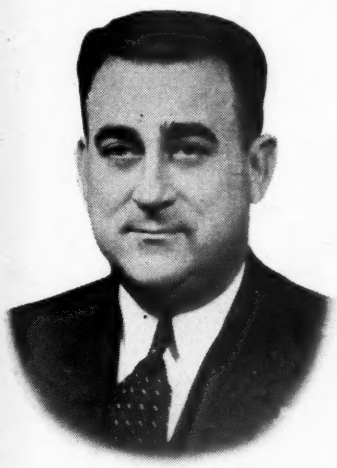
J. H. Gill has been appointed assistant superintendent, North Carolina division, of the Seaboard Air Line, with headquarters at Hamlet, N. C. **C. H. Lineberger, Jr.,** has been named assistant superintendent, South Carolina division, with headquarters at Charleston, S. C., succeeding **O. R. Teague,** who has been transferred to the staff of the general manager at Norfolk, Va.

R. D. Garner, chief engineer of the Central Vermont, has been appointed acting general manager of that road succeeding **H. A. Carson,** who has retired from the position. Mr. Carson was born at Toronto, Ont., in 1888, and entered the service of the Grand Trunk in 1917 as commercial agent at Montreal, Que. He was appointed district freight agent of the Canadian National at Toronto, Ont., in 1928, and general freight agent of the Canadian National-Grand Trunk at Boston, Mass., two years later. Mr. Carson served as general freight agent of the Central Vermont from 1932 until 1937, when he was appointed to the

H. A. Carson

position of general manager, from which he recently retired. He is also a director and general freight agent of Central Vermont Terminals, Inc., of New York.

Sidney Kerl, whose appointment as superintendent of the Washington Terminal Company at Washington, D. C., was announced in the *Railway Age* of March 11, was born at Marsh Run, Pa., on June 7, 1891. He attended Baltimore City College, and entered railroad service in May, 1909, as a telegraph operator of the Baltimore division, Northern Central (now Pennsylvania). Mr. Kerl then filled successively the positions of train clerk, train wire operator, train director, train dispatcher, assistant yardmaster and assistant stationmaster, until November, 1928, when he became assistant passenger trainmaster of the New York division with headquarters at Jersey City, N. J. During succeeding years he served as stationmaster at Pennsylvania station, New York; Newark, N. J.; North Philadelphia, Pa.; and Pittsburgh, Pa. In November, 1936, Mr. Kerl was appointed assistant trainmaster in charge of electrified passenger operations of the Long Island at Flatbush Avenue Terminal, Brooklyn, N. Y., being placed in charge of freight operations at Long



Sidney Kerl

Island City, N. Y., two years later. During 1939 and 1940 he was placed in full charge of the Long Island's train operations at the New York World's Fair, and on January 16, 1941, was appointed passenger trainmaster of the Long Island. He continued in this capacity until his present appointment as superintendent of the Washington Terminal Company, with headquarters at Washington, D. C.

TRAFFIC

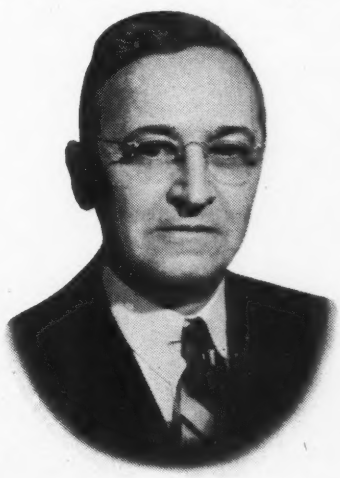
Harry E. Benson, assistant general freight agent of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line), with headquarters at Minneapolis, Minn., has been promoted to general freight agent, solicitation, with the same headquarters. **W. H. Hall,** traveling freight agent, with headquarters at Great Falls, Mont., has been advanced to general agent, with the same headquarters.

Samuel C. Inkley, whose promotion to assistant freight traffic manager of the St. Louis-San Francisco (Frisco), with headquarters at St. Louis, Mo., was reported in the *Railway Age* of March 4, was born at East St. Louis, Ill., on January 17, 1899, and was graduated from law school in 1931. He entered railway service in August, 1913, with the accounting department of the St. Louis & San Francisco (now the

Samuel C. Inkley

St. Louis-San Francisco), as an office boy, subsequently holding various clerical positions at St. Louis until December 1, 1934, when he was promoted to assistant general freight agent, with the same headquarters. On October 1, 1940, Mr. Inkley was advanced to general freight agent, with headquarters at St. Louis, the position he held at the time of his new appointment.

Herman P. Norden, whose promotion to freight traffic manager in charge of rates of the St. Louis-San Francisco (Frisco), with headquarters at St. Louis, Mo., was reported in the *Railway Age* of March 4, born at St. Louis, on June 19, 1891, and entered railway service with the St. Louis & San Francisco (now the St. Louis-San Francisco), as an office boy of the freight



Herman P. Norden

traffic department. He later held several minor clerical positions at St. Louis until May 24, 1920, when he was promoted to chief clerk of that department. On October 15, 1924, Mr. Norden was advanced to assistant general freight agent, with the same headquarters, and on January 1, 1935, he was promoted to assistant freight traffic manager, the position he held at the time of his new appointment.

J. W. Stevenson, assistant passenger traffic manager of the Illinois Central, has been promoted to passenger traffic manager, with headquarters as before at Chicago, succeeding **J. V. Lanigan,** whose retirement, effective April 1, was reported in the *Railway Age* of February 19. **G. G. Truesdale,** general passenger agent at Chicago, has been advanced to assistant passenger traffic manager, with the same headquarters, replacing Mr. Stevenson, and **D. J. Hearne,** assistant general passenger agent, has been promoted to general passenger agent, with headquarters as before at Chicago, relieving Mr. Truesdale. **E. R. Vaughn,** district passenger agent at Jacksonville, Fla., has been advanced to general passenger agent, with headquarters at St. Louis, Mo., succeeding **G. R. Kimbel,** who has been appointed assistant general passenger agent at Chicago, replacing Mr. Hearne. **E. L. Holmes,** district passenger agent at Minneapolis, Minn., has been transferred to Louisville, Ky., relieving **F. H. Tucker, Jr.,** who has been transferred to Jacksonville, succeeding Mr. Vaughn. **S. S.**

J. W. Stevenson

Stone, assistant in rates, has been appointed assistant general passenger agent, with headquarters as before at Chicago, a change of title. Mr. Stevenson was born in Chicago on September 17, 1888, and entered railway service in 1903 as an office boy for the Western Passenger Association. After subsequent service on the Chicago Great Western as a rate clerk, he entered the employ of the Illinois Central in the same capacity in 1912. In two years he rose to chief clerk of the passenger department, and in 1920, after a short experience as district passenger agent in Chicago, became chief clerk of the traffic department. In 1921 he was promoted to assistant general passenger agent, which position he has held until May, 1943, when he was appointed assistant director of the passenger section in the division of traffic movement of the Office of Defense Transportation at Washington, D. C. He returned to the I. C. in October of the same year as assistant passenger traffic manager, the position he held at the time of his new appointment.

News Department continued on second left-hand page

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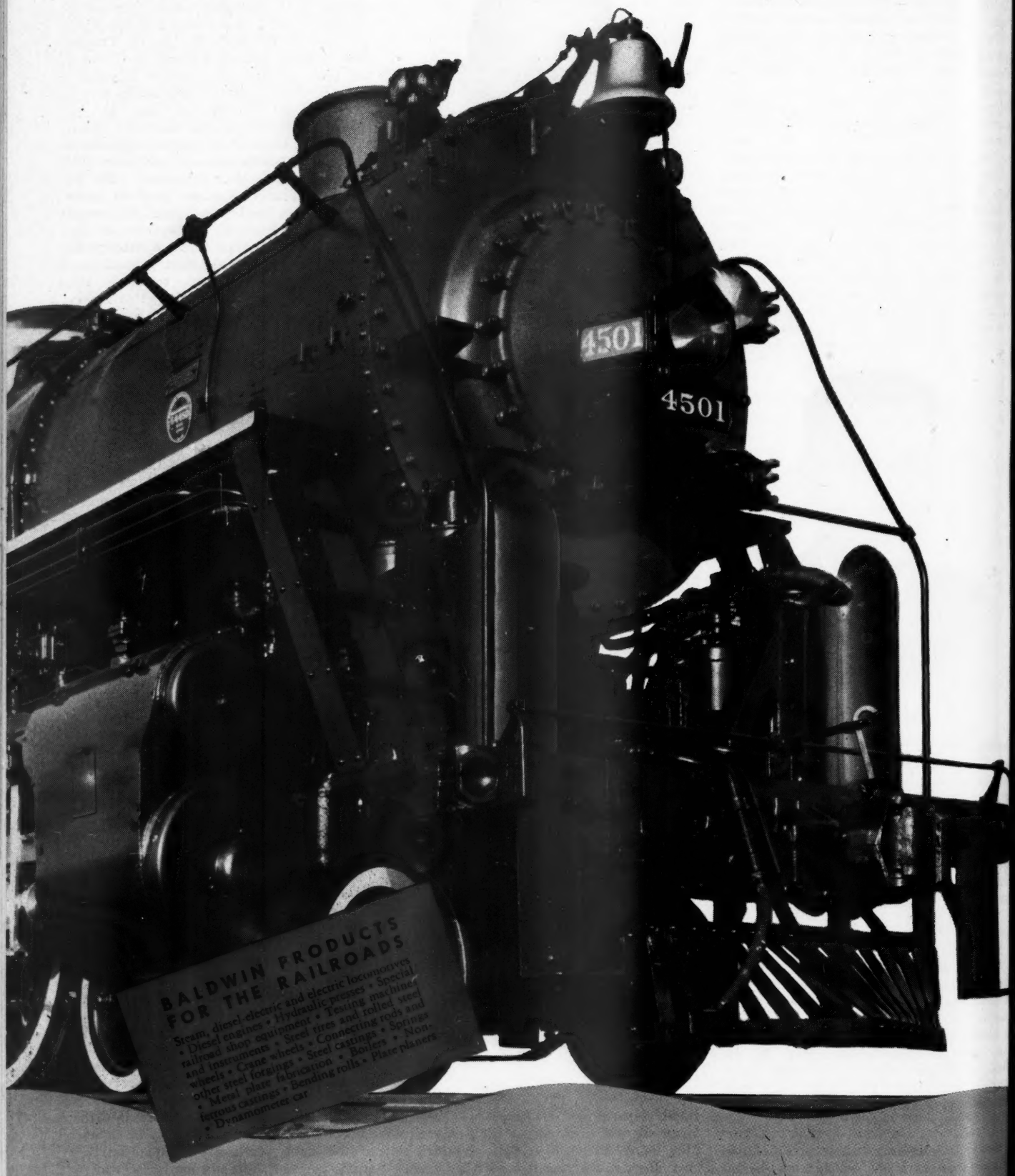
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Baldwin service to the railroads merely *starts* with locomotives. The Baldwin Locomotive Works, Philadelphia, Pennsylvania.

BLW THE BALDWIN GROUP

BALDWIN

The Baldwin Locomotive Works, Philadelphia, Pennsylvania: Locomotive & Ordnance Division; Baldwin Southwark Division; Cramp Brass and Iron Foundries Division; Standard Steel Works Division; Baldwin De La Vergne Sales Corp.; The Whitcomb Locomotive Co.; The Pelton Water Wheel Co.; The Midvale Co.

BALDWIN SERVES THE NATION WHICH THE RAILROADS HELPED TO BUILD

ENGINEERING & SIGNALING

John I. Kirsch, whose appointment as superintendent telegraph and signals, Eastern region, of the Pennsylvania, was announced in the *Railway Age* of February 19, was born at Rosemont, Pa., on September 27, 1894. He was graduated from Villa-

John I. Kirsch

nova College in 1917 with a B.S.E.E. degree, later receiving the degree of electrical engineer. In June, 1917, Mr. Kirsch entered the service of the Pennsylvania at Paoli, Pa., as a laborer. After serving as bonus clerk and special apprentice in the telegraph and signals department he was furloughed for military service, returning as special apprentice, New York division, in July, 1919. Subsequently he was appointed to the successive positions of assistant signal foreman, telegraph and signals, Atlantic division; foreman telegraph and signals of the Sunbury division; assistant supervisor telegraph and signals of the Baltimore division; signal inspector, Western region; and supervisor telegraph and signals of the Long Island. On August 1, 1931, Mr. Kirsch was transferred in the same capacity to the New York division of the Pennsylvania, and in 1937 was transferred again in that postion to the office of the chief engineer on special duty. He became assistant superintendent telegraph and signals, Eastern region, in January, 1939, continuing as such until his recent appointment as superintendent telegraph and signals, Eastern region, with headquarters at Philadelphia, Pa.

H. J. Bogardus, division engineer of the Pere Marquette, with headquarters at Saginaw, Mich., has been promoted to assistant engineer maintenance of way, with the same headquarters, a newly-created position.

K. H. Hanger, engineer maintenance of way of the Missouri-Kansas-Texas, with headquarters at Dallas, Texas, has been promoted to chief engineer with headquarters at St. Louis, Mo. **J. J. Gallagher,** division superintendent at Denison, Texas, has been advanced to engineer maintenance of way, succeeding Mr. Hanger. **C. W. Campbell,** division superintendent at Franklin, Mo., has been transferred to Denison, replacing Mr. Gallagher, and **F. P. Stocker,** superintendent at Wichita Falls, Texas, has been transferred to Franklin, relieving Mr. Campbell. **Carey Hosmer,** agent at Kansas City, Mo., has been promoted to division superintendent at Wichita Falls, succeeding Mr. Stocker.

Robert W. Ross, whose promotion to district engineer, Western region of the Canadian National, with headquarters at Winnipeg, Man., was reported in the *Railway Age* of February 26, was born at Walton, Ont., on May 12, 1885, and entered railway service in August, 1904, as a chainman of the Grand Trunk Pacific (now part of the Canadian National). Two years later he was advanced to instrumentman at Winnipeg, being transferred to Melville, Sask., in 1908. In 1910 Mr. Ross was promoted to resident engineer on construction, with headquarters at Prince Albert, Sask., later serving as resident engineer, maintenance, at Melville, and at Watrous, Sask. In 1918 he was advanced to division engineer, with headquarters at Biggar, Sask., and in September, 1920, he was transferred to Edmonton, Alta., remaining in that location until his new appointment, effective January 1.

MECHANICAL

F. E. Malloy, master mechanic of the San Joaquin division of the Southern Pacific, with headquarters at Bakersfield, Cal., has been advanced to assistant superintendent of motive power, with headquarters at Sacramento, Cal., succeeding **E. E. Hinchman,** whose promotion to superintendent of motive power, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of March 11.

George W. Bohannon has resigned as mechanical engineer of the Duluth, Missabe & Iron Range, with headquarters at Duluth, Minn., to become assistant to the chief mechanical officer of the Chicago & North Western, with headquarters at Chicago, a newly-created position. **William H. McAmis** has resigned as general foreman of the Missouri Pacific, with headquarters at St. Louis, Mo., to become chief mechanical inspector of the North Western, with headquarters at Chicago, a newly-created position.

OBITUARY

Mathew W. Connelly, director of publicity of the Louisiana & Arkansas, with headquarters at Shreveport, La., died at his home in that city on March 2, following a heart attack.

Julius E. Willoughby, consulting engineer of the Atlantic Coast Line, who was chief engineer of that road until January 1, 1942, died at Sarasota, Fla., on March 11. He was 72 years old.

Frederick Hayden Meeder, who retired in 1939 as assistant controller of the New York Central System, died at the age of 75, on March 6 at his home in New York.

John B. Munson, who retired on February 1, 1940, as vice-president of the Southern, died at Cincinnati, Ohio, on March 5. Mr. Munson was born at Wilmington, N. C., on April 20, 1864. He entered railroad service in 1882 as delivery clerk, Wilmington & Weldon (now Atlantic Coast Line), serving subsequently as receiving and billing clerk, on the same road, stenographer to the general freight agent of the Atlantic Coast Line, rate clerk

John B. Munson

on that road, and chief clerk to the division freight and passenger agent of the Richmond & Danville (now Southern). After acting successively as general freight agent and assistant to the president of the Knoxville, Cumberland Gap & Louisville (now Southern) Mr. Munson returned to the Richmond & Danville and its successor, the Southern, as chief clerk to the general freight agent, and division freight agent. In March, 1899, he was appointed general agent in the freight department of the Southern at New York. He became assistant freight traffic manager in April, 1907, and vice-president of the Georgia Southern & Florida the following year, serving in this capacity until 1918. He was also appointed president of the St. Johns River Terminal Company in 1908, receiver of the Macon & Birmingham in September, 1910, and general manager of the Georgia Southern & Florida in March, 1911. Mr. Munson was appointed to the position of vice-president of the Southern in July, 1918, serving until his retirement in February, 1940.

Walter S. Horton, who retired in 1927 as general counsel of the Illinois Central, with headquarters at Chicago, died at his home in Peoria, Ill., on March 13. Mr. Horton was born near Delavan, Ill., on December 3, 1857, and graduated from the University of Michigan in 1882. In the same year Mr. Horton was admitted to the bar in Illinois and became a member of the law firm of Stevens, Lee & Horton at Peoria, Ill. During the 20 years from 1889 to 1909 he was a member of the firm of Stevens & Horton in the same city and he was then appointed general attorney of the Illinois Central, with headquarters at Chicago. In 1918 he was promoted to general solicitor, being advanced to general counsel in 1920. He held the latter position continuously until the time of his retirement from active service. From 1898 to 1901 Mr. Horton was a member of a commission appointed to revise the laws regulating practice in the courts of Illinois.